

AMERICAN ARTISAN

JUNE, 1948

48th Year

RESIDENTIAL AIR CONDITIONING • WARM AIR HEATING • SHEET METAL CONTRACTING

This Issue

new type of cooperative
paper advertising that
benefit dealers is ex-
posed on Page 64

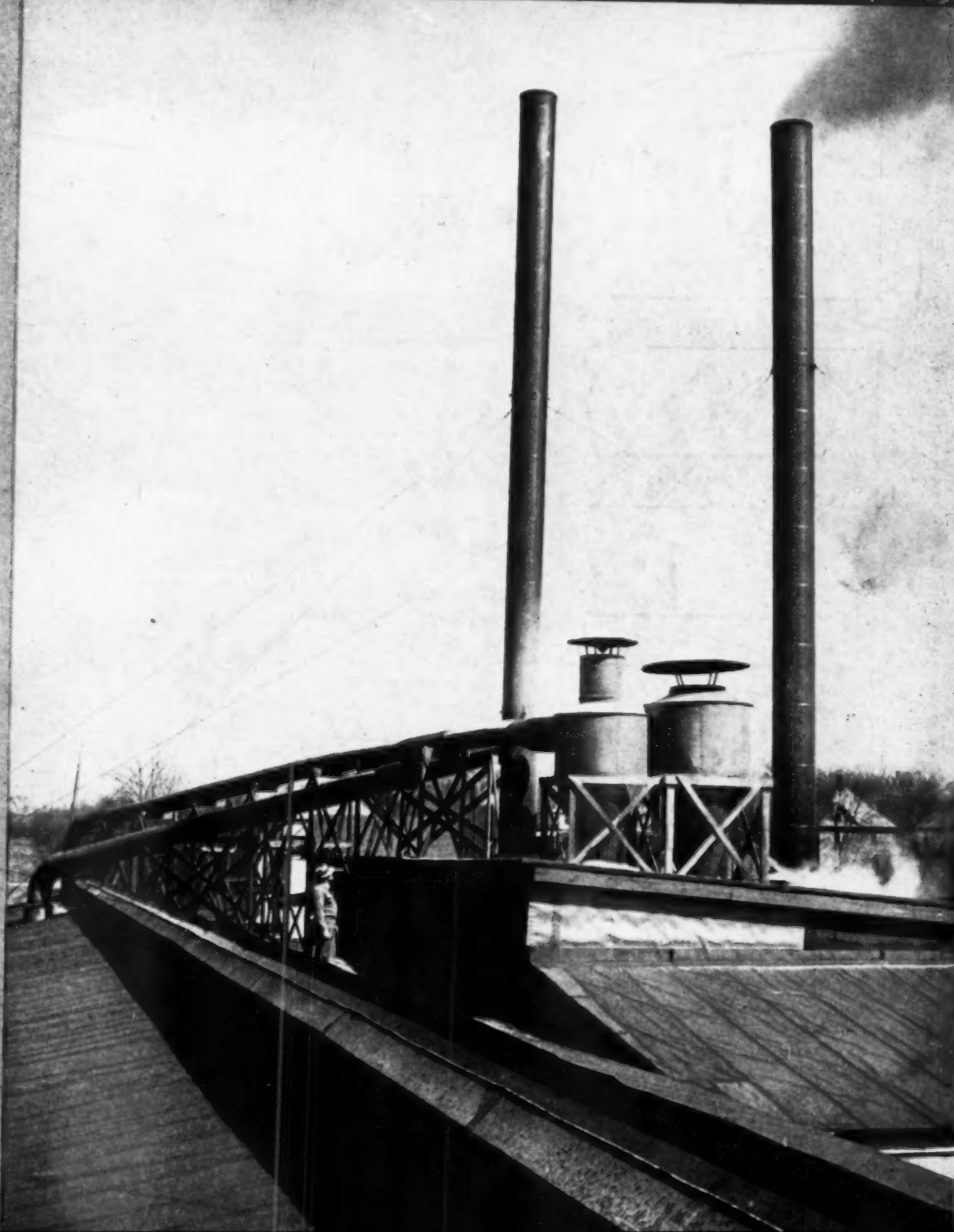
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best sales argument to
be used for comfort cooling
installations. See Page 80

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best conditions to be
used where the floor is
concrete slab. Page 83

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um siding is an
structural application of
popularity. Learn
to make it, economi-
cally on a shop brake.

Cover Picture

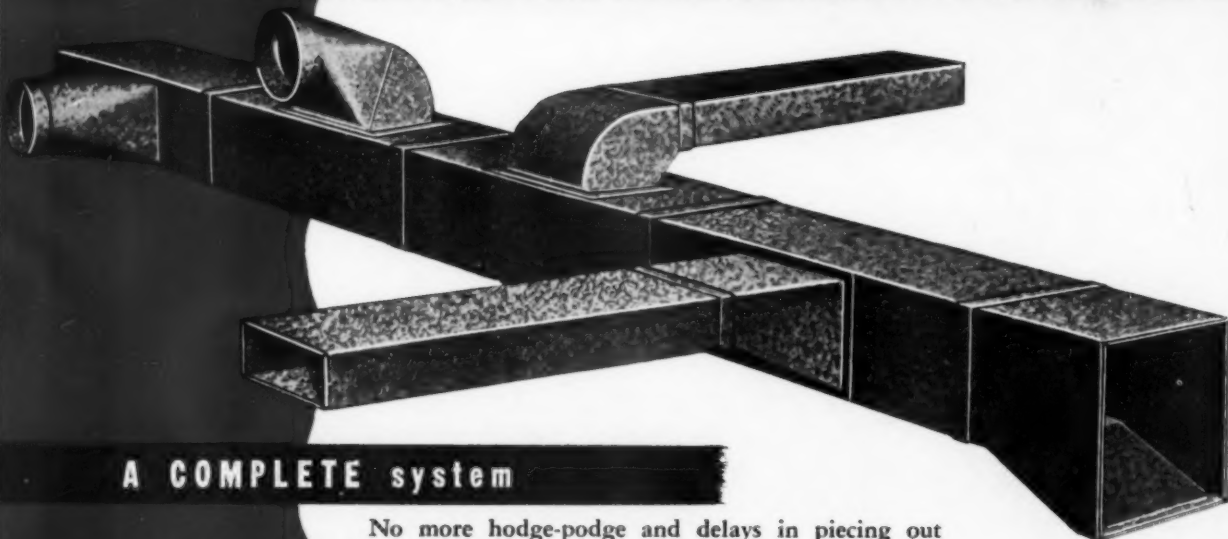
•
a system for re-
wood waste is
Many sheet metal
and profit possibili-
ties in this work. Page 95



The New

**You'll PROFIT better
and
WIN more sales with**

Lamneck Simplenic System



A COMPLETE system

No more hodge-podge and delays in piecing out the required materials and fittings to complete a job, with a complete precision-matched Simplenic bill-of-materials!

SIMPLIFIED for efficiency

Only four duct fittings are required for serving every take-off application—and *no* increasers or reducers are needed! Fewer pieces to handle, fewer to assemble, no odd item stock problem!

FAST to install

Precision fabrication of all parts gives fast, accurate fitting—improved type, self-locking joint connections speed assembly operations—simple for even new men to install properly.

and LOW COST for volume sale!

Our production-line volume and material-saving design and your simplified job-figuring, material stocking, and installation ease, let you *buy* and *sell* the Simplenic System at best competitive prices!

CLAYTON & LAMBERT MFG. CO.
1760 DIXIE HIGHWAY • LOUISVILLE 10, KY.

WRITE
TODAY for

Simplenic

descriptive price list
and name of your
nearest jobber.



Lamneck

**FURNACE PIPE
AND FITTINGS**

THERE'S A "FEEL" ABOUT



usAIRco YOU'LL LIKE . . .

The Customer's mighty important!

IF you need a piece of equipment in a hurry, there's a lot of assurance in knowing that you can pick up the phone and call usAIRco and reach the man who can get action for you.

There's a will-to-serve at the other end of the line . . . and, if it's within the realm of possibility, an earnest desire to get things done for you.

If you need some engineering counsel you're sure to receive it . . . and in a way that makes the word simplicity make sense.

There are a lot of boys at usAIRco that remember the early thirties . . . and they seem never to have forgotten that a customer is a very important person . . . and they apparently have gotten this over to the younger members of the organization . . . even their bright young engineers.

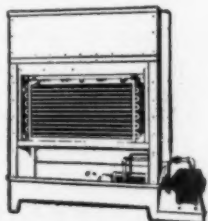
usAIRco's engineering staff has a talent for sound simplicity of designs, which is immediately apparent in their product . . . but they've never let their talent go to their head. They're still in there pitching to help you with even the simplest installations.

usAIRco has it . . . send them an order and see what I mean.

UNITED STATES AIR
COMO AVE. S.E. AT 33RD



CONDITIONING CORPORATION
MINNEAPOLIS 14, MINN.



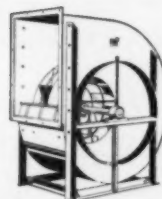
EVAPORATIVE CONDENSER

An efficient, economical unit for condensing refrigerants. Also used industrially for cooling, quenching and tempering oils. Permits savings of 95% in water costs.



REFRIGERATED KOOLER-AIRE

Cooling and de-humidifying units, compressor and evaporative condenser provide a balanced assembly in a single cabinet. Supplied in three sections if desired for easier installation.



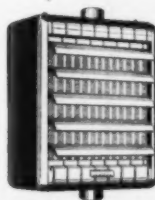
BLOWERS

Forwardly curved type ventilating fans are engineered for quiet operation. Backwardly inclined types are designed for installation where non-overloading characteristics are required.



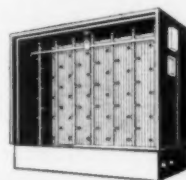
UNIT AIR CONDITIONER

Can be equipped to provide one or all functions—heating, cooling, humidifying and de-humidifying. Available in ceiling or floor models in 9 capacities up to 12,000 CFM.



UNIT HEATER

Suspension type unit heaters, for use with steam or hot water, provide flexibility of use and low cost operation. All-copper heating element promotes maximum heat transfer.



AIR-WASHERS

Single and double stage air-washers provide an excellent means of air cleaning, cooling, humidifying and de-humidifying. All steel, arc-welded construction throughout.

AMERICAN ARTISAN

Member—Audit Bureau of Circulations
Member—Associated Business Papers

**RESIDENTIAL
AIR CONDITIONING
WARM AIR HEATING
SHEET METAL CONTRACTING**

Merged with American Artisan are "Warm Air Heating" and "Furnaces and Sheet Metals"

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Founded 1880

JUNE, 1948

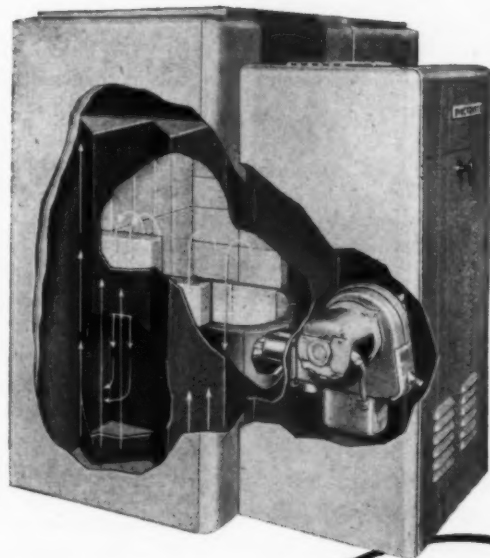
Volume 117, No. 6

AMERICAN ARTISAN, June, 1948

SYNCROMATIC

WORLD'S FINEST HEATING EQUIPMENT

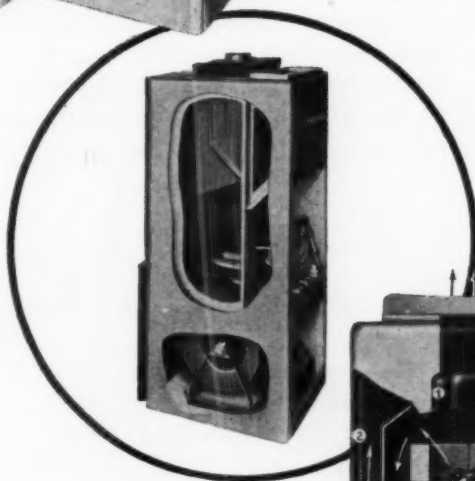
Modern Design



Syncromatic Oil-Fired Unit is the successful result of intelligent and logical application of the counterflow principle in warm air heating . . . one of the most efficient methods of heat transfer known . . . completely welded and with no bolted sections in air stream for your protection.

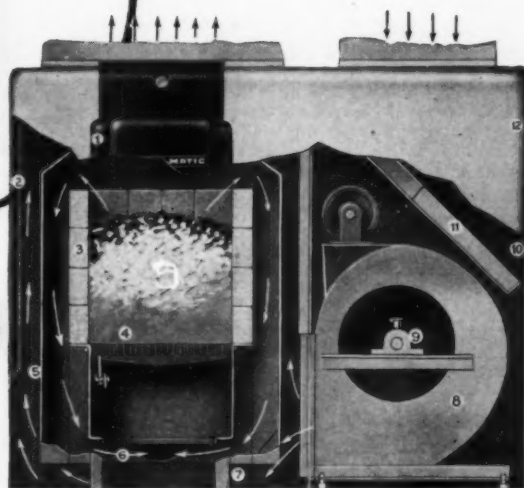


GFB Gas-Fired Units cutaway of Hi-Boy model showing heavy 10 gauge counterflow heat exchanger.



Durability and safety as well as counterflow efficiency are built into this gas section.

Coal-fired furnace showing how air from blower wipes all heated surfaces of this counterflow furnace to give maximum efficiency in heat transfer and to eliminate burnouts due to hotspots. Isolated fire brick refractory super heats carbons in fuels to produce highest burning efficiency.



Syncromatic Corporation
WATERTOWN, WISCONSIN

The Editor's NOTE BOOK

That Time of Year...

In the December issue you reproduced a cartoon from the *Des Moines Register* which dealt with the preparation of heating systems during the slack season.

Would it be possible to secure a mat of this cartoon and permission for use by our local sheet metal contractors association?

Any information you can give us will be appreciated.

K. B. McQUEEN

Secretary,
Sheet Metal Contractors Association of Evansville (Indiana), Inc.

... In Des Moines

Permission for use of J. N. "Ding" Darling's cartoon may be granted solely by the copyright owner. AMERICAN ARTISAN has no authority to grant permission.

However, many readers will be interested to learn that permission was granted to a group of dealers and jobbers in Des Moines for use under the sponsorship of the HEATING INDUSTRY OF DES MOINES. Sufficient funds were contributed to publish several announcements centered around the theme of the cartoon.

The first announcement in the May 14 issue of the *Des Moines Tribune* reads, "THE POOREST TIME TO BUY A GOOD HEATING JOB FOR YOUR HOME IS IN AUGUST, SEPTEMBER AND OCTOBER, WHEN EVERYONE ELSE IS DOING IT."

It urges readers to "Avoid Hurried Buying, and Poor Planning That Goes With It, Under Rush Conditions Prevalent After August 15."

Getting down to the public appeal for early attention to

MERCOID

WARM AIR FAN CONTROL



TYPE M-43

DESIGNED FOR THE JOB

This control is designed for warm air furnaces. It may be used either with automatically fired equipment or hand fired jobs using a booster fan.

The proper use of a booster fan not only provides greater room comfort, but is a very effective means of conserving fuel.

It may well be considered a necessity on all gravity furnaces. It enables one to boost the temperature where it is needed most. It does not operate until the furnace is warm enough to deliver heat, therefore, cold air is never blown into the rooms.

This control is also provided with a summer-switch, which permits using it for summer room air cooling by blowing the cool air from the basement into the rooms.

Further information upon request.

THE MERCOID CORPORATION
4201 Belmont Avenue Chicago, Illinois

*The only 100% Mercury Switch equipped controls
They assure better control performance and longer control life*

The Editor's NOTE BOOK

heating needs: "The best workmanship and all around knowledge of the business come from those men employed the year around and not those added for seasonal demand. There are not enough seasoned men to meet the abnormal demand put upon us by the public after August 15. Be wise and shop for your next winter's ideas the next sixty days."

And finally, "Investigate the reliability of the dealer through your Better Business Bureau."

This effort toward leveling the seasonal sales curve is a splendid example of what a group can do in appealing for public cooperation. After first appearing on the front page of the *Des Moines Register* last fall, about the time when heating systems are started for the long Iowa winters, the cartoon reappears as an appeal to think of next winter's heating needs early, before the annual fall rush. This use is more of the nature of public education instead of sales copy and it is evident that permission for use was granted on this premise.

Many local associations have similar opportunities to act as a unit in sponsoring ethical objectives and curbing local abuses.

Local activity to promote good public relations in the warm air heating and sheet metal industry should be on the agenda of every local association. It would at least partially oppose the flood of publicity from competing industries. Competing publicity has gone unopposed too long. Its influence will be experienced in the future when competition for the heating dollar develops.

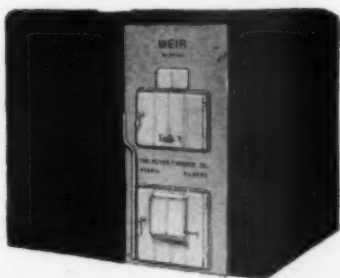


Here are the Facts about 'All-Fuel' Furnaces:

Don't kid your customers or be fooled yourself! A "conversion job" just can't be as efficient and economical as a unit designed and built for a specific fuel!

But, of course, your first job is to assure your customers efficient heating despite widely varying fuel shortages. That means that sometimes you will have to sell a coal furnace for later conversion to gas or oil; be sure that it can be done efficiently.

The Weir all-steel U Series Furnace is your best bet where conversion is likely. Designed to burn coal, coke, wood, or cobs, its revolutionary, permanently leakproof Integral Heating Element (Pat. applied for) facilitates installation and permits efficient conversion to oil or gas, including L. P. On solid fuel it's "tops"; converted, it's the next best thing to Weir-Meyer equipment especially designed for gas or oil.



WEIR-MEYER means modern heat

Weir-Meyer equipment, including modern Winter Air Conditioners, is available for every fuel, for every installation. Remember, if it's Weir-Meyer, it's first-line equipment of proven salability! Weir-Meyer distributors and dealers know that the Weir-Meyer franchise means undisputed leadership. Inquiries from aggressive dealers are invited — there's still some "open" territory.

THE MEYER FURNACE COMPANY - GENERAL OFFICES  **PEORIA 2, ILLINOIS**



Gas-fired Hi-boy



Gas-fired Air Conditioner



Gas-fired Gravity



Oil-fired Hi-boy



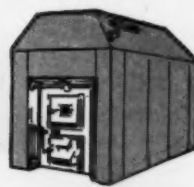
Oil-fired Air Conditioner



Weir Steel Furnace



Coal-fired Air Conditioner



Industrial & Commercial Heating Equipment

MANUFACTURERS OF WEIR & MEYER FURNACES - AIR CONDITIONERS FOR GAS - OIL - COAL - FACTORIES: PEORIA AND PERU, ILLINOIS

The Editor's NOTE BOOK

Profit Sharing Problem

I read the article *They'll Work Harder to Earn More!* by David Markstein, in the January 1948 issue and found it extremely interesting because it might be applied to our own shop.

The article suggested an employee profit sharing plan whereby a percentage of the year's profit would be distributed among the employees based on length of service and the amount earned during the year.

I would appreciate receiving more detailed information about the plan. The amount based on earnings can be figured easily and simply because this is the percentage one employee earns compared with the total of all employees. However, it is not clear how the provision for length of service might be used in deciding the amount paid to each employee.

Many thanks for the interest and space you have devoted to management and employee relations. These are important subjects to many heating and sheet metal dealers.

J. W. ZIEGLER
H. J. Ziegler Heating Co.
Ashtabula, Ohio.

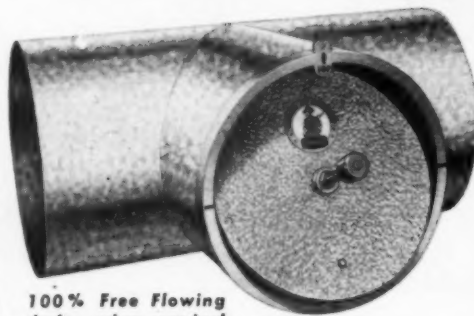
If the distribution formula is based solely on earnings, senior employees may feel their loyalty and interest are not recognized. On the other hand, if each participant's earnings are weighted by his years of service, the distribution becomes discriminatory in favor of the senior employees.

Instead of calculating the percentage, consider each \$100 of earnings as one unit

Sentry-

FUEL AND HEAT CONTROLS

SENTRY DRAFT REGULATORS



100% Free Flowing
draft—when required

All unnecessary working parts have been eliminated in this new economical and efficient draft control. Baffle plate and mounting ring are of durable light weight aluminum—bearings and pivots of non-corrosive brass. This permits free, automatic operating action and feather-light sensitivity to the slightest air currents at all times—as well as assurance of long life. Pre-setting balance is carefully factory adjusted. Sentry regulators are available in sizes from 4" through 10" in diameter for horizontal or vertical pipe installations.

AT-A-GLANCE TANK GAUGES

The outstanding gauge in the field, it was chosen for nearly 50% of the installations made in 1945-46. Clear visibility with accurate, easy reading from all directions is only one of its many features. In addition, simplified mechanism eliminates intricate working parts such as gears, cams, springs or magnets which often cause trouble and wear out. Fully approved and listed as standard by the Underwriters' Laboratories, Sentry at-a-glance gauges are durably built, guaranteed leak-proof and will withstand filling pressure of more than 50 lbs. per sq. inch. Installation is quick and easy—even when a tank is partially filled. Sentry gauges are factory designed and constructed to fit all tank sizes and shapes, including barrels and drums.



Write for fully
illustrated brochure.



KRUEGER *Sentry* PRODUCTS
GREEN BAY • WISCONSIN

The Editor's NOTE BOOK

or share in the allocation. This is comparable to a percentage distribution because it establishes the units proportional to earnings. If an employee earned \$5000, he would be credited with 50 units.

Years of service may now be reflected in the distribution by adding units according to a schedule which judgment indicates is equitable, say one unit for each full year of employment. Another method would be to multiply the units by a factor representing the years of service, say 1 for one year and increasing by increments to (say) 2 for ten years.

The number of possible combinations is legion and an equitable formula becomes a problem of the management of the particular business.

When the total number of units is established, the unit value is determined from the amount of the profit sharing fund.—ED.

More For All

Maximum production of goods, made available to the greatest number at the lowest possible prices, is the basic answer to inflation.

Americans know well that in production, more production and more productivity, is the answer to many problems which plague us today.

Our ability to produce, to out-produce the whole world in fighting goods, made us the arsenal of freedom in two global wars.

The ability to produce and the will for unity under common stress, these are the things which set America apart in all mankind's history.



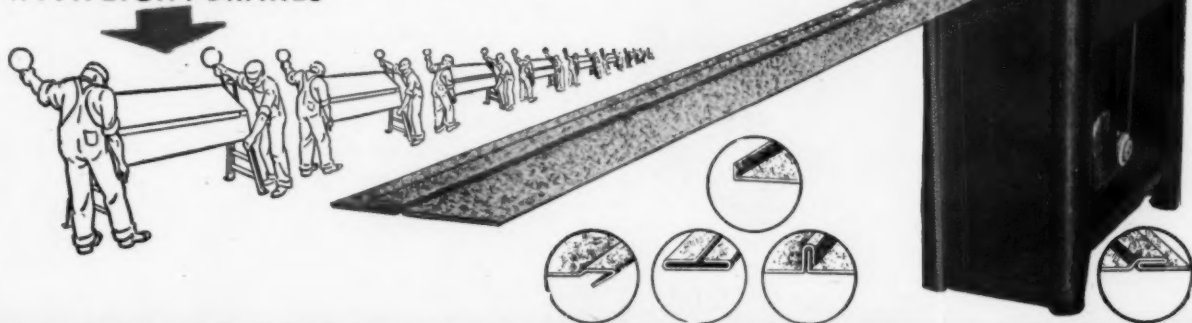
... it's even easier on a
LOCKFORMER!

Any user will tell you that his Lockformer is the "biggest money-maker" in the whole shop. First, it cuts over-all fabrication costs **IN HALF!** — takes plenty of dollars out of the cost column and puts them into the profit column. Second, it more than doubles the capacity of any shop — lets the same number of men "in the shop" keep up with twice as many men "on the job".

Third, it boosts efficiency by reducing fatigue — skilled workers aren't tired out by needless manual labor.

These are only a few of the reasons why a Lockformer is the most profitable investment a Sheet Metal Contractor can make! Write us for literature — facts and figures — on this very real "money-maker"!

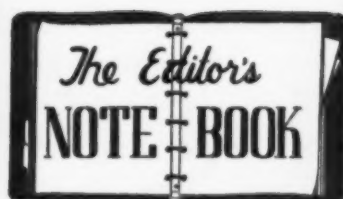
ONE MAN WITH A LOCKFORMER CAN MAKE MORE
 PITTSBURGH LOCKS THAN SIXTEEN MEN
 WITH EIGHT BRAKES



THE LOCKFORMER CO.

4615 W. ROOSEVELT ROAD

• CHICAGO 50, ILLINOIS



Bureaucracy at Work

Joker regulations are not confined to any one of the bureaucracies. They are common to all and the British bureaucracy is no exception.

One story tells how the British Board of Trade ordered metal discs attached to the horns of pedigreed Aberdeen Angus bulls before export. Later the order was amended to read that the horns must be branded. It was finally revoked when the bureaucrats learned that Aberdeen Angus bulls have no horns.

Another story is that a group of former Polish soldiers learned to make surgical instruments, intending to start business in pre-fabricated huts. They couldn't get a license to erect huts, so were sent to a resettlement center to learn another trade.

Such blunders are not jokes to the people affected. It must be remembered that the British ministries tell people what to eat, how much clothing they can buy, how to build and repair their homes, as well as who can drive an auto or kill a pig.

The government, as boss of Britain's planned economy, employs more than two million persons to enforce some 25,000 regulations. About 2,000 are busy just rationing bread.

If the threat of government control of fuels becomes real next winter, this characteristic of the bureaucracies should be remembered.

Definition

Inflation: When prices of the things you sell sound GOOD, and the things you buy—AWFUL.

THERE'S A Draft-O-Stat FOR EVERY REQUIREMENT

MODEL "B" DOMESTIC — new design

The new Model "B" Draft-O-Stat represents the latest achievement in precision combustion control for the small heating plant. Adjustable counter-weighted flutter controls draft barometrically, saving fuel, reducing smoke and soot, and improving furnace operation. Two sizes, to fit flue pipes from 6" to 9".



MODEL "A" DOMESTIC

The original Draft-O-Stat for automatic control of chimney draft in furnaces and boilers. Adjustable counterweight provides precision control of draft. Available with or without thimble. Nine sizes, 7" to 20".



COMMERCIAL

For use in apartment buildings, hotels, schools, small factory and office buildings. Can be used on natural-draft or motor-driven oil burners, hand-fired boilers, stokers, and forced-draft installations. Available with or without hand control. Four sizes, 16", 18", 20" and 24".



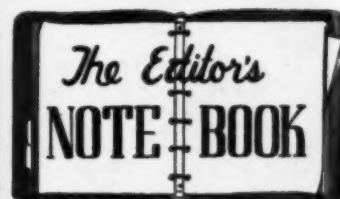
INDUSTRIAL

Sturdily built heavy-duty draft control for large heating plants. Available with or without breeching plate and thimble, and with or without locking device. Like other Draft-O-Stats, it pays for itself in most cases, out of one year's fuel savings. Three sizes—24", 30" and 36".

Write for descriptive literature

THE HOTSTREAM HEATER CO.
6917 Quincy Avenue • Cleveland 4, Ohio

Manufacturers of water heaters and draft controls



Out of Sight Out of Mind

Quite some time ago you advertised a product which we are interested in purchasing, if the company is still in business. Recent issues have not had any advertising of this particular product.

It was a firepot lining material used for relining firepots of old furnaces.

Would you have any way in checking the name of this advertiser for us?

H. L. HOUSEHOLDER
Householder Heating Corp.
Buffalo, New York.

For You—Free!

For you, one of the most valuable advertising spaces in the world is the few square inches occupied by your name plate attached to the products you install.

It is exclusively yours. Money cannot buy it, yet it sings your name, whether the installation is made in a factory where employees, management, and visitors see it, or in a home where occupants and guests see it.

A name plate on every installation proclaims your pride in workmanship, your confidence in satisfactory performance, and is a constant reminder of your service.

In This Issue

Efforts to effectively control rising production and overhead costs depend upon the information at management's command.

Profit and loss statements effectively show where management's attention should be directed. This month, Betty Lee Gough tells how profit and loss may be determined frequently.



*Read What These Exclusive
Distributors Say About*
MAYFLOWER FURNACES

"We have nothing but good things to say about the Mayflower furnaces. Not only is the job a good looking one, but installation is easy and the performance is perfect."

H. S. SHARP

Sharp Heating Supply Inc.—Cleveland, O.

"We are recommending our seven years experience distributor for your Mayflower furnaces. We have found your merchandise good—completely satisfactory to our customers."

L. E. FAVRET

Favret Furnace Supply Co.—Columbus, O.

"We have been delighted with the operation of your gas and oil fired units in the field. The customers are pleased with the economy and appearance of the units and the comfort derived from them is exactly as our dealers have promised."

R. J. LORENE

Chicago Furnace Supply Co.—Chicago, Ill.

Exclusive Mayflower Dealerships Are Available in Some Territories.

MAYFLOWER
AIR-CONDITIONERS, INC.

SAINT PAUL

MINNESOTA

The Editor's NOTE BOOK

Public Relations in Oil

"Over 34,000 individual oil companies are using every means at their disposal to supply the oil you want . . . when and where you want it.

"More petroleum products will be delivered this year. Be sure to use them efficiently. Oil is energy for America. Oil means more comfort, better health, greater convenience—for you.

"With a trillion-gallon underground reserve as a backlog . . . oil companies strive to supply you with *more and more*. Every branch of the oil industry—producer, refining, transportation, marketing—is stepping up the pace in 1948 . . . working to supply America's ever-increasing needs."

The above excerpts from a series of advertisements in national weeklies show that the petroleum industry is striving to fulfill demand for its products, and the public is being made aware of this effort.

Activities reported recently in the press confirm the efforts to supply the nation's petroleum needs. One story told of tapping the under-sea reserves nine miles out in the Gulf of Mexico. From a platform supported by pilings driven 170 feet into the sea floor, drilling to tap an estimated reserve of 5 billion barrels is underway.

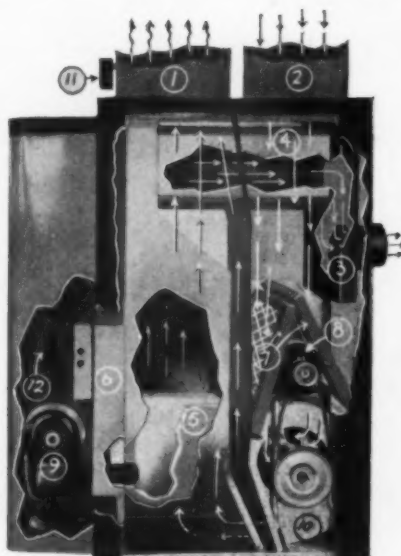
The first advertisement aimed at overcoming public concern in the supply of petroleum products appeared in the June 5, issue of the *Saturday Evening Post*. Others will follow in *Life*, *Look*, *Colliers*, *Pathfinder*, *American Weekly*, and *This Week*.

Steel Earnings

Discussing the annual report



Quality and Beauty AT LOW COST!



5 Sizes Counter-Flo Basement Type
66,000 to 200,000 Btu.-

2 Sizes Utility Type Hi-Boys
85,000 and 100,000 Btu.

One Gravity Furnace—64,000 Btu.

**A SIZE and TYPE for EACH HOME
NATION-WIDE DISTRIBUTION**

Write—

J. V. PATTEN COMPANY

Sycamore, Illinois

The Editor's NOTE BOOK

of the Inland Steel Company with stockholders, Wilfred Sykes, president, said:

"It requires twice as much money to replace buildings, machinery, and equipment as it did in 1936. Earnings evaluated in terms of purchasing power are far less attractive than they appear from a casual examination of the annual report."

Polls

I read the other day that if you want public opinion on anything, take a poll of the morons. Implying, of course, that morons are polled for opinions about anything.

Possibly there is something to this crumb thrown in jest.

It reminds me of my pet poll: trying to find someone who has actually been polled in one of the polls constantly running around the country.

So far, my efforts have been fruitless.

Where do the pollees come from?


Are they really morons?

Wage Boosts

According to Senator Joseph H. Ball, of Minnesota, the annual round of wage increases can lead to serious consequences.

"But over the years, production has increased only two or three per cent per year and any wage increases in excess of that inevitably mean higher prices," the Senator declared. "The price squeeze does not apply evenly, of course, but hits certain groups much harder than others. The end result, unless that spiral is stopped, will be an inflation and depression in which everyone will suffer."

The **MASTER BLOWERTROL** -the *NEW* Thermo-Electric Blower Control for Forced Air Heating & Summer Cooling.

Continuous blower operation throughout the heating season is permitted by *Blowertrol*. 

Air Moves at speeds all the way from full blower capacity down to an almost imperceptible zephyr.

Smooth and Silent Changes in velocity are accomplished by altering the blower speed in response to changes in plenum temperature.

Cool Air is never permitted to circulate during the heating season except at extremely low velocity.

Clears Ducts of Cool Air before sufficient velocity is achieved to cause drafts in rooms.

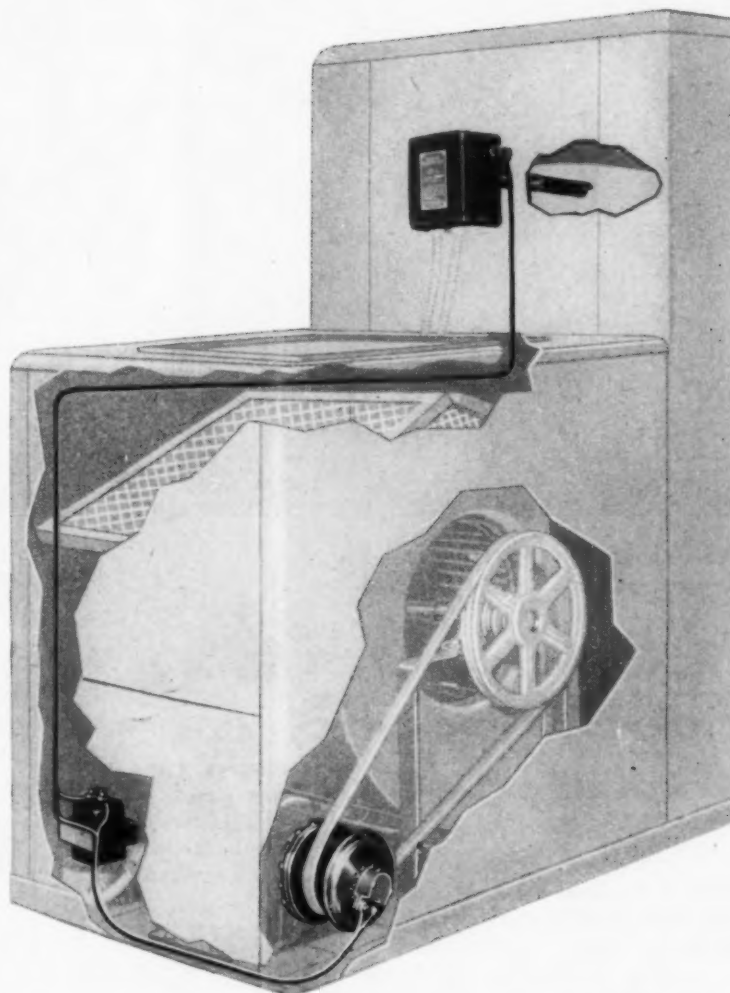
For Summer Cooling *Blowertrol* will operate blower continuously at full speed by just pushing a button.

Constant Temperature—Maintenance of constant room temperature is greatly facilitated by *Blowertrol*.

No Cold Zones—*Blowertrol* avoids cold zones and uncomfortable drafts due to improper warm air circulation.

In Mild Weather when little or no heat is required, *Blowertrol* automatically turns the blower motor off completely.

High Limit Switch provided with *Blowertrol* may be set to shut down the burner at the desired high limit temperature.



Patent No. 2322405. Other Patents Applied for. Also licensed under Patent 1885048.

The **MASTER BLOWERTROL**

provides a degree of comfort and general user satisfaction far beyond the capabilities of any conventionally controlled forced air heating system. Yet notwithstanding its truly marvelous performance, its cost is still well within the means of the modest small home owner.

Full Information Sent Upon Request

Produced by the mfrs. of **MASTER THERMOSTATIC CONTROLS**—for over a quarter of a Century the Standard of the Industry.

WHITE MANUFACTURING CO.
2362 University Avenue
St. Paul 4, Minnesota

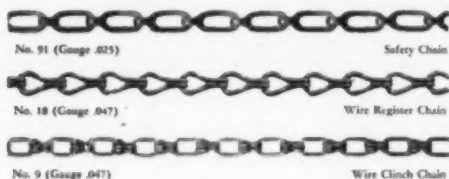


first

**In Furnace Accessories
as well as Registers!**



FURNACE REGULATOR SETS — furnished as standard with either 24 or 30 feet of chain.



CHAIN is furnished standard in 30', 36' or 100' lengths packed in cartons, or in 500' lengths on reels.



No. 10

No. 11

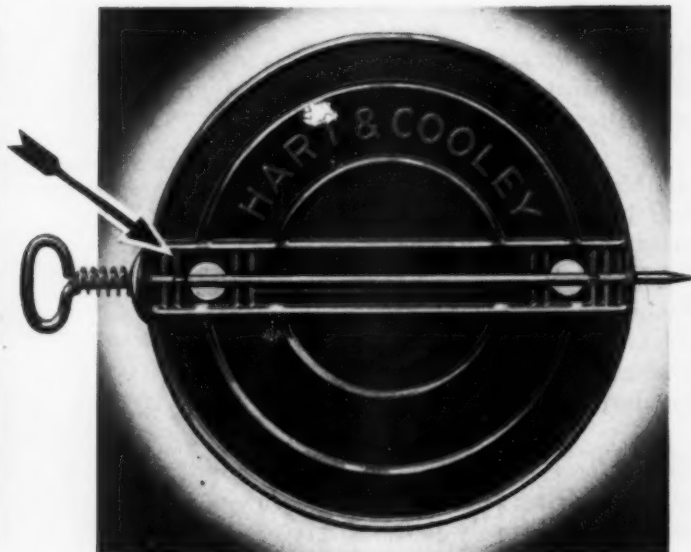


DAMPER CLIPS AND TIPS — made of steel. Pronged for quick and secure fastening. No rivets required.

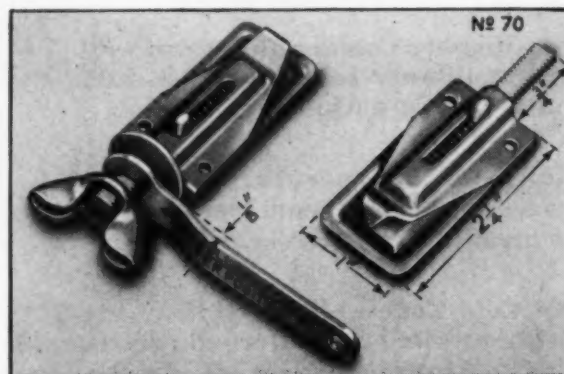
OTHER ITEMS

No. 80-3/4 Dial Type Damper Regulator Set and
No. 50-3/4 Damper Regulator Set (3/8" bearings)
Casing clips and S Hooks
Chain — non standard lengths.

No. 10 (1 1/4" wheel) screw-eye pulley and
No. 11 (1 1/4" wheel) stationary screw pulley.
Other pulleys available in sets with any combination S-hooks and chain desirable.



STEEL WARM AIR DAMPERS — strong and sturdy with extra embossing for added rigidity. Spindle insertable from either side — always tight.



"QUICK-WAY" DAMPER REGULATOR SETS — fastened with just one solid hammer-blow. No anvil required. 5/16" bearings. Similar sets except with dial indicator available.

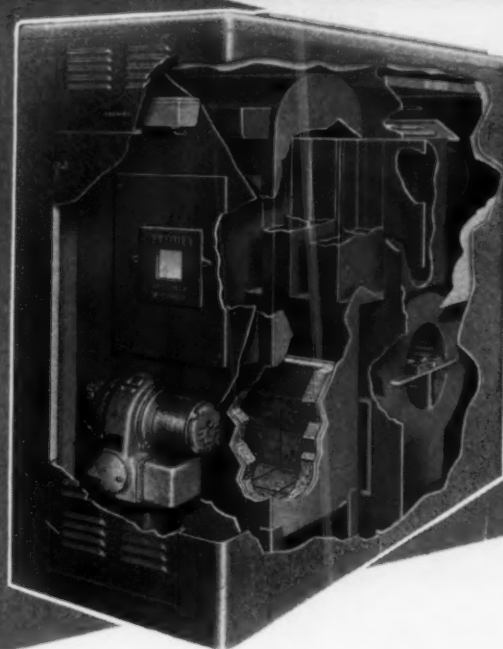
SEE THE COMPLETE LINE . . .

illustrated and described in our No. 48 Catalog which also shows the ideal register for every type of installation.



HART & COOLEY MANUFACTURING CO., HOLLAND, MICH.
World's Largest Manufacturers of Registers, Grilles and Furnace Accessories

SPECIAL ATTENTION GIVEN TO *Seams*



POPULAR PREMIER MODEL RX-6

Completely Automatic Oil-fired Winter Air Conditioner. Furnished with oil burner, blower, filters, automatic humidifier and highest quality controls. 117,600 BTU output at bonnet.

PREMIER PERSONALITIES

CHARLES H. LITHGOW
Superintendent
Sheet Metal Production



"I'm no salesman, but any time you want to visit my department, I'll be glad to show you how we make PREMIER Equipment. I think you'll agree it's well made, and it ought to be, because we've got good workmen, good equipment, and a management that has always believed in quality."

A stocking without a seam is like a kiss without a hug — interesting but not too exciting.

A furnace without a seam, however, would be ideal since there could never be any escape of smoke, soot or gas into the circulating warm air.

PREMIER, in effect, eliminates the seams by *electrically welding every joint*. Through this highly developed welding process, the entire furnace body actually becomes a single, continuous unit, in which the welds are thicker and stronger than the heavy steel plate itself.

As an added precaution against the slightest possibility of leakage, PREMIER tests every completed steel furnace body it makes, *under pressure*.

PREMIER Furnaces are products of true quality, yet they are strictly competitive in price. That is one big reason why so many of today's leading Independent Furnace Dealers prefer to handle the PREMIER line.

PREMIER FURNACE CO., DOWAGIAC, MICH.

PREMIER

Oil Burners • Blowers • Humidifiers
Winter Air Conditioners • Steel Furnaces



Millions of people changed our name

You may think it strange that millions of people could have a voice in changing a company's name, but that is what has happened to The American Rolling Mill Company.

Several years after the company started operations in 1900, it adopted the trademark "ARMCO" for its special grades of steel. The ARMCO trademark—composed of the first letter in each word of the company name—has been widely advertised and appears on all the company's products. Many ARMCO customers identify their use of these special-purpose steels with this familiar trademark.

Through the years—as the original small mill grew into one of the country's great steel companies—our customers, dealers and the public alike have preferred to call the company "ARMCO."

So, in recognition of this preference, the name of the company has been changed from The American Rolling Mill Company to Armco Steel Corporation.

The change is one of name only. It does not affect ARMCO management, personnel and long-established policies. It *does* emphasize more strongly the importance of the ARMCO trademark, and increases its value to those who use ARMCO Special-Purpose steels in the things they make.

The alert research and production men who have perfected so many special-purpose grades of ARMCO steel will continue to improve present steels while developing new ones to help manufacturers build better products for the home, farm and industry. Armco Steel Corporation, Middletown, Ohio. Export: The Armco International Corporation.



ARMCO STEEL CORPORATION

THE FAMILIAR ARMCO TRIANGLE IDENTIFIES SPECIAL-PURPOSE STEELS THAT HELP MANUFACTURERS MAKE MORE ATTRACTIVE, MORE USEFUL, LONGER-LASTING PRODUCTS



TODAY your prospects want fuel flexibility

This all-purpose Winter Air Conditioner designed For COAL — Converts QUICKLY and EASILY to OIL, GAS or STOKER, and operates with high efficiency.

NEW Thatcher 481

Look at these **7 big selling features**

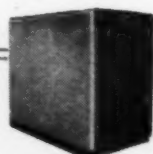
- **FULL-SIZE REVERSIBLE BLOWER CABINET** — complete flexibility, install it on either side of the unit.
- **LARGE CAPACITY RUBBER MOUNTED BLOWER** — generous air circulation, more efficient heat transfer, quiet.
- **REPLACEABLE FILTERS** — throwaway type, easy to get at, generous filtering area.
- **HIGH RATIO OF HEATING SURFACE TO GRATE AREA** — delivers extremely high percentage of heat from fuel.
- **MASSIVE FRONT CASTINGS—LARGE DOORS—CAST IRON GRATES** — for long life, easy fire tending.
- **HEAVY GAUGE STEEL HEAT EXCHANGER** — permanently welded into a gas tight compartment.
- **HANDSOME CASTILIAN-RED JACKET** — lined with air-metering inner casing.

Heating comfort through any fuel emergency! That's what you sell homeowners with Thatcher's NEW Series 481.

Here's the fuel flexibility homeowners want right now. And in the 481, it's backed by Thatcher's 98 years of heating know-how. This unbeatable combination means more sales, more easily. For complete details on the Series 481, write to us today.



GARWOOD, NEW JERSEY



Comfortmaster
Oil-Fired
Air Conditioner



Comfortmaster
Gas-Fired
Air Conditioner



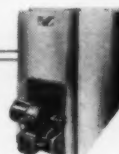
Triple-Fire
All-Purpose
Boiler



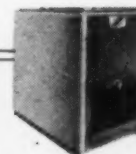
Oil Master
Automatic
Oil-Fired Boiler



Thermaster
Gravity
Furnace



New 550
Oil-Fired
Air Conditioner



New A-204
Oil-Fired
Air Conditioner

Fill All Your Register Needs at **Auer**

- a dependable source of supply

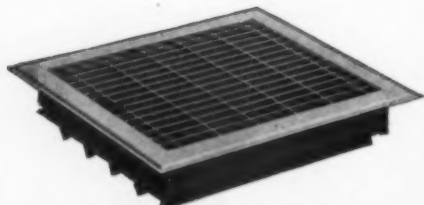
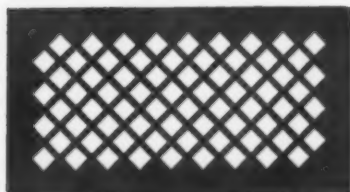
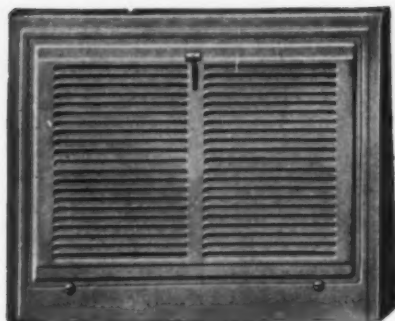


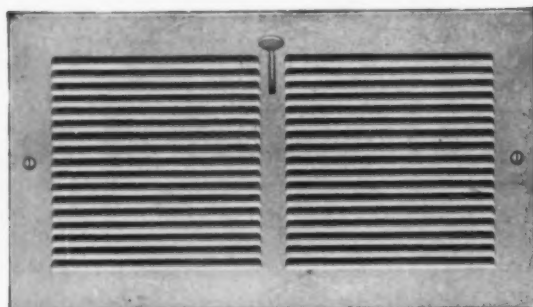
Fig. DR—DuraBilt Floor Register



No. 6A—Diagonal Mesh Grille



No. 800—Heat-Rite 2-Piece Gravity Baseboard Register



No. 7032—Airo-Flex Single Louvre Adjustable Face Register



More and more of our customers, new and old, are concentrating on Auer as a single source of supply for all their register and grille requirements. The advantages of this practice are many—the customer becomes entirely familiar with the characteristics of our products, their uniform quality and ease of installation. When he places an order, he knows we will do our best to ship to his satisfaction. Price and supply inquiries, shopping around, and clerical work are reduced. We ourselves become conversant with his desires and special preferences. You will find it good business to *standardize on Auer*.

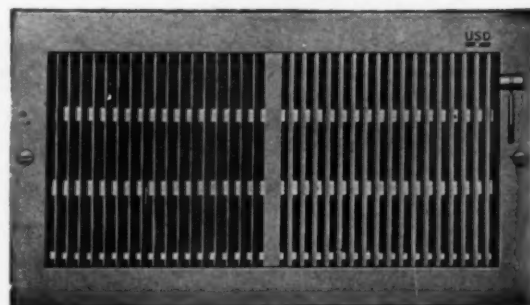
Auer makes a complete line of modern and attractive registers for floor, base, and wall, as well as return faces, for all gravity or air conditioning systems—including all latest air directional and adjustable types. We also manufacture flat stamped metal grilles, in materials or sizes as desired, for ventilation, concealment, radiator enclosure, or other purposes. These outstanding products, always maintaining fundamentally good design and workmanship, always sold at the lowest possible cost, provide you with an abundant choice of models and prices for every purpose.

THE AUER REGISTER COMPANY

3608 Payne Avenue

Cleveland 14, Ohio

Auer Register Book, illustrating and listing all designs, sizes and prices—or separate Grille Catalog "G", supplied on request.

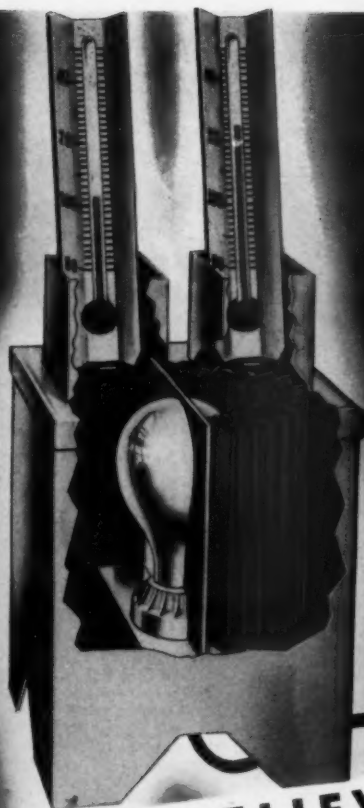


No. 4432—Airo-Flex Multi-Louvre Adjustable Face Register

Auer

REGISTERS

& GRILLES for AIR CONDITIONING & GRAVITY



The VICTOR

TABLE TOP

FIN FURNACE

Demonstrator

SELLS EASIER
SELLS FASTER
SELLS MORE

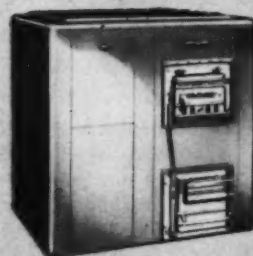
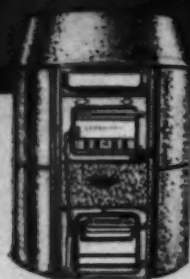
They **BELIEVE** it
When They **SEE** it

- THE HOTTEST
FURNACE
DEMONSTRATION
ON THE MARKET!



This miniature furnace proves dramatically the extra heat developed by Victor FINS. Twin thermometers tell the story. One side of this little furnace has FINS... the other side does not. Heated by one light bulb, it shows how the EXTRA heating surface provided by VICTOR FINS heats air to a higher temperature FASTER. It is Honest... it is Convincing. The thermometers or fins may be interchanged. The result is the same... conclusive, visual proof that Victor Heat Radiating FINS DO save fuel.

A SURE-FIRE SALES CLOSER!



..VICTOR

FIN Furnaces

for Coal • Gas • Oil

New Accounts are being added
Write Us for details TODAY!

COAL • GAS • OIL FURNACES • OIL BURNERS • STOKERS • BLOWERS • ACCESSORIES



Timely Tips on Stainless Steel Shop Practices

(No. 7 of a series)

SILVER BRAZING



... is especially useful in joining non-ferrous metals with ENDURO Stainless Steel, and for making joints where welding is not practical. Clean surfaces are essential to proper flow of the brazing alloy, and even heating is necessary for proper penetration. An oxy-acetylene torch, adjusted to a neutral flame, is the most widely used heating method.

GAS WELDING



Gas or acetylene welding is used extensively on ENDURO Stainless Steel, especially in lighter gages—20 or thinner. Flame should be as small as possible, supplying just enough heat to produce good fusion. The ideal adjustment would be exactly neutral, but, where this is rather difficult to maintain, it is advisable to use a slight excess of acetylene.

MAKING JOINTS

Plain or lap joints can be made with ENDURO Stainless Steel where stress will not be too great. Best method is first to roughen edges to give solder a good hold. Tin the surface using stainless flux, neutralize, then spot weld at regular intervals for mechanical strength. Seal the joint with solder using cut acid or stainless steel flux.



PROTECTING SURFACES

Wax paper, oiled paper or cellophane placed between ENDURO's polished surface and brake dies prevents direct contact. Adhesive tape applied to dies serves the same purpose. Scratches and abrasions can be avoided during layout and forming, by pasting paper over the entire polished sheet, or by spraying or dipping with an easily removed liquid plastic coating.



Big profits are waiting for shops familiar with the fundamentals of working ENDURO Stainless Steel. And, as these brief samples of shop-tested information indicate, those fundamentals are easy to pick up. You'll find them in the two fact-filled books, "The Fabrication of Republic ENDURO Stainless Steel" and "The Welding of Republic ENDURO Stainless Steel." Write today for your *free* copies of latest editions.

REPUBLIC STEEL CORPORATION

Alloy Steel Division • Massillon, Ohio

GENERAL OFFICES • CLEVELAND 1, OHIO

Export Department: Chrysler Building, New York 17, New York

...AND THE
BEST TIP



ALWAYS
USE...

Republic
ENDURO STAINLESS STEEL



Other Republic Products include Black, Galvanized, Galvannealed and Electro Paintlok Sheets—Toncan Iron Sheets

A QUICK REPLACEMENT
for MANUAL THERMOSTATS



THE "PLUG-IN" Chronotherm

IT'S NEW....
SPECTACULAR

IT'S FOR THE
MASS MARKET

IT'S NATIONALLY
ADVERTISED

IT'S AN OVER-THE-
COUNTER ITEM

A sales sensation in just a few short weeks!... and no wonder, because the new "Plug-In" Chronotherm is made-to-order for the biggest volume market of them all—replacement sales.

Here's a nationally advertised packaged item for over-the-counter sales. It replaces manual thermostats and provides the vital *fuel-saving* advantage of automatically lowered night-time temperatures, plus carefree comfort 24 hours a day.

Less than 10 minutes are usually needed by a householder for installation. With "Plug-In" Chronotherm there's no basement work, no installation problems. So sell the "Plug-In" as

a package and let your customers connect it. Send out your salesmen. They can connect it while they demonstrate it. Have your service men carry them and show "Plug-In" Chronotherm on every call. It's a mass sale item for the mass market. Write today for advertising, direct mail, and promotional material. Start selling *now*—every 10 Chronotherms sold save enough fuel for another burner installation. And for new homes, new installations, always sell the standard Chronotherm, which provides the same fuel saving and comfort advantages as the "Plug-In." Minneapolis-Honeywell, Minneapolis 8, Minn. In Canada: Leaside, Toronto 17, Ontario.

Chronotherm — the clock that says a warm good morning

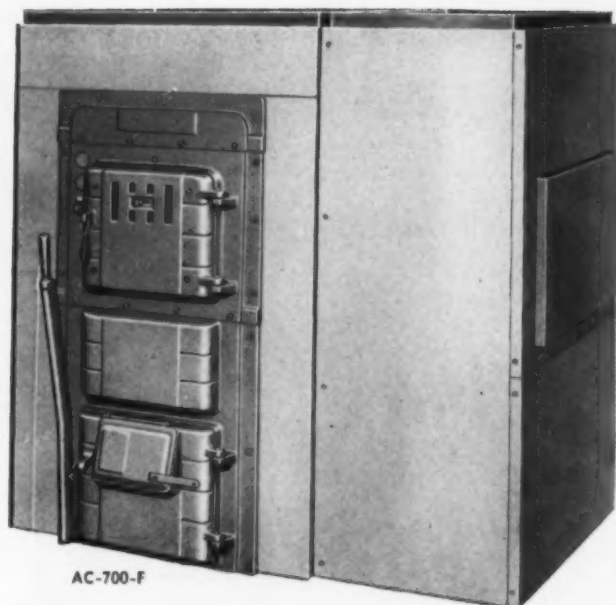
SEND FOR
THE WHOLE STORY

MINNEAPOLIS
Honeywell

CONTROL SYSTEMS

73 BRANCHES FROM COAST TO COAST WITH SUBSIDIARY COMPANIES IN: TORONTO • LONDON • STOCKHOLM • AMSTERDAM • BRUSSELS • ZURICH • MEXICO CITY

PARLAY *Luxaire's* "3 in 1" UNIT



AC-700-F

Install today for coal—with confidence! Convert at any time in the future to oil or gas with the same confidence.

Luxaire's "3 in 1" coal unit is designed and constructed so as to provide the necessary requirements and versatility for converting to oil or gas or stoker firing.

Luxaire's "3 in 1 combination" air conditioning unit is your assurance that you can meet the demands of the home heating market.

WIN BOTH WAYS!

1.

Engineered
for

1. COAL
Hand Fired
Stoker Fired

EASILY CONVERTED
and well adapted for

2. OIL
and
3. GAS

2.

Greater **SALES**
Greater **SATISFACTION**
Greater **PROFIT**

You can't miss, day in and day out with this winning combination.



Series A
Gas-Fired Steel
Air Conditioning
Unit



Series G
Gas-Fired, Steel
Gravity
Furnace



Series H
Gas-Fired, Utility
Steel Air
Conditioning Unit



Series CA
Gas-Fired, Cast
Iron Air
Conditioning Unit



Series CH
Gas-Fired, Cast
Iron Utility Air
Conditioning Unit



Series O
Oil-Fired, Steel
Air Conditioning
Unit



Series VH
Oil-Fired, Steel
Utility Air Con-
ditioning Unit



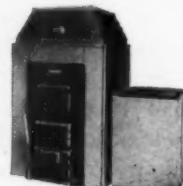
Series VA
Oil-Fired, Steel
Air Conditioning
Unit



Series VG
Oil-Fired, Steel
Gravity
Furnace



Series 700
Coal-Fired, Steel
Gravity
Furnace



Series AC-700
Coal-Fired, Steel
Air Conditioning
Unit



Series C
Coal-Fired, Cast
Gravity
Furnace

THE C.A. OLSEN MANUFACTURING COMPANY

Luxaire



HEATING & AIR CONDITIONING UNITS

"I find Penn Controls mean
fewer call backs for service,
because of their dependability"

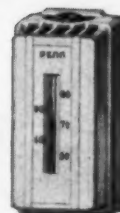


Douglas Patterson, owner Old Saybrook Plumbing and Heating Co., Saybrook, Conn. and his new radio-equipped service truck.

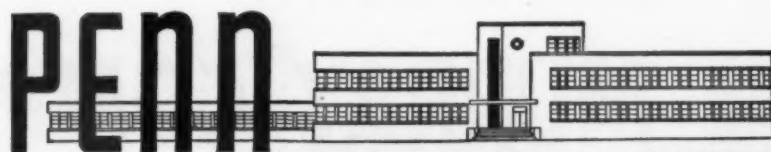
"Doug" Patterson is keenly aware of the value of satisfied customers. His new service truck is the first in his area to have two-way radio telephone for constant contact with his office. He installs high quality equipment and he chooses Penn Controls for their reliable performance. Penn Heating Controls will protect profits and build more business for you, too. See your wholesaler, or write **Penn Electric Switch Co., Goshen, Ind.** Export Division: 13 E. 40th St., New York 16. In Canada: Penn Controls Ltd., Toronto, Ontario.



Penn Tem-
Clock Saves
Fuel



Penn Ther-
mostat Ends
"Cold 70"

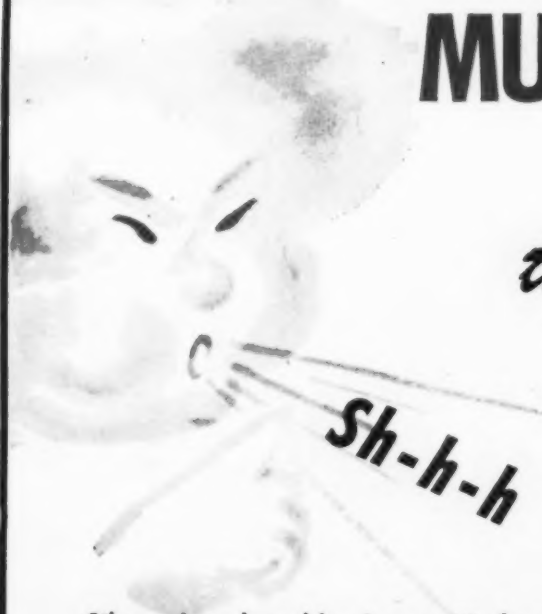


AUTOMATIC CONTROLS

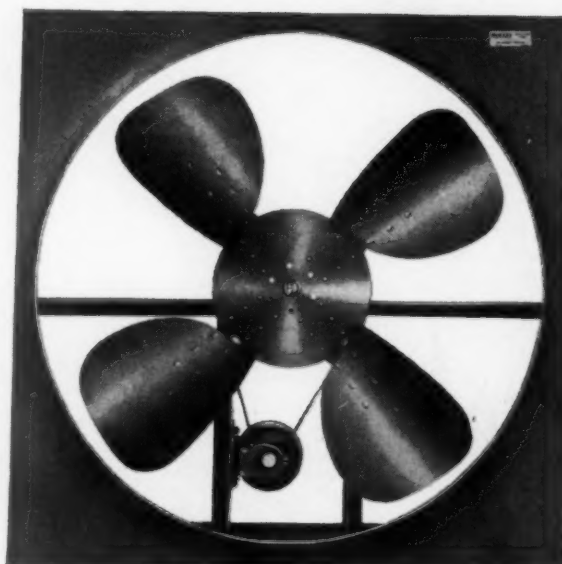
FOR HEATING, REFRIGERATION, AIR CONDITIONING, ENGINES, PUMPS AND AIR COMPRESSORS

MURRAY ATTIC FAN

*The Fan
that does its work
in a Whisper*



Silence is truly golden in an attic fan. And the Murray Attic Fan — the fan that does its work in a Whisper — is engineered to perform with maximum efficiency and minimum sound. Noise is eliminated by the special construction of Murray Attic Fans—curved flange orifice in housing, rubber-mounted motor, vibration-free bearings, balanced assembly. Murray Attic Fans are easy to install, are made in four sizes to meet all needs. Write for complete specifications.



✓ Deep, curved flange orifice cuts down air resistance, eliminates noise.

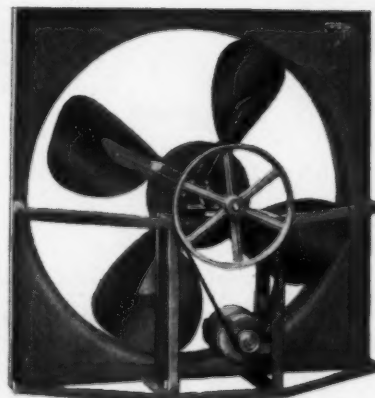
✓ Four, broad, deep-pitched blades provide maximum suction and steady flow of air.

✓ Resilient base motor and rubber-insulated Oilite sleeve bearing on fan shaft eliminate vibration and operating noise.

✓ Economical, quiet operation assures owner satisfaction.



MURRAY SALES INCREASES — Write for these free booklets and sales helps. *Installation Manual:* Complete step-by-step installation instructions. *Consumer Mailing Pieces:* Sure-fire, sales-building folders to enclose in your mailings. *Newspaper Ads:* Complete mats furnished, including various fan illustrations and suggestions for use in building your sales.



THE MURRAY COMPANY

ATLANTA, GEORGIA

Established in 1900

DALLAS, TEXAS



THE TREND TO QUALITY BUYING MEANS *Increased Rybolt Sales*



● The selling honeymoon is over in the heating field as in all other lines. Instead of simply taking whatever he can get, wherever it may be available, the consumer again has become selective in his buying and insists on getting more value for his dollar.

This is tough for the dealer with "take-it-or-leave-it" heating equipment on his floor in which quality was a secondary consideration. But it opens up a real opportunity for RYBOLT jobbers and dealers, because for over 35 years the RYBOLT line has been noted for its outstanding high quality. Through all these years the name RYBOLT has been synonymous with better heating efficiency, economy and dependability.

In the new RYBOLT line the emphasis continues to be on quality throughout—quality that meets the buying trend of today and gives the consumer the lasting service and satisfaction he is looking for.



THE RYBOLT HEATER COMPANY
615 MILLER STREET ★ **ASHLAND, OHIO**

SERVICE is our story!

Prompt and efficient service is the only way to build a good, substantial reputation. That's just as true in your case as in ours since we're both in the same boat. *We* must keep ourselves out in front to assure repeat business from dealers and you'll have to do the same so homeowners will remember to call you for additional work or recommend your aggressive service policy to others.

The point of this story is to remind you that there is now a definite trend toward repair work so it's well to lay the foundation for a steady, lucrative business of this type. As a rule homeowners haven't the slightest idea of what's wrong with a poorly operating furnace. They *are* aware of expensive operation and unevenly heated rooms and a quick check by you will most probably reveal a crying need for new firepots, grates, furnace pipe, dampers and other items quickly and easily obtained from us. The business is there if you'll look for it and we're always ready and able to supply the parts you need with a minimum of delay.

Remember—"Service is *our* story" and we can easily help *you* to make it yours.

Northwestern

STOVE REPAIR CO.

662 West Roosevelt Road

Chicago 7, Illinois

SUNBEAM

AMERICAN STANDARD

THE BUDGET

THE GIRL'S WORLD

THE BOY'S WORLD

YOU CAN'T MISS WITH SUPPORT LIKE THIS!

AMERICAN-Standard

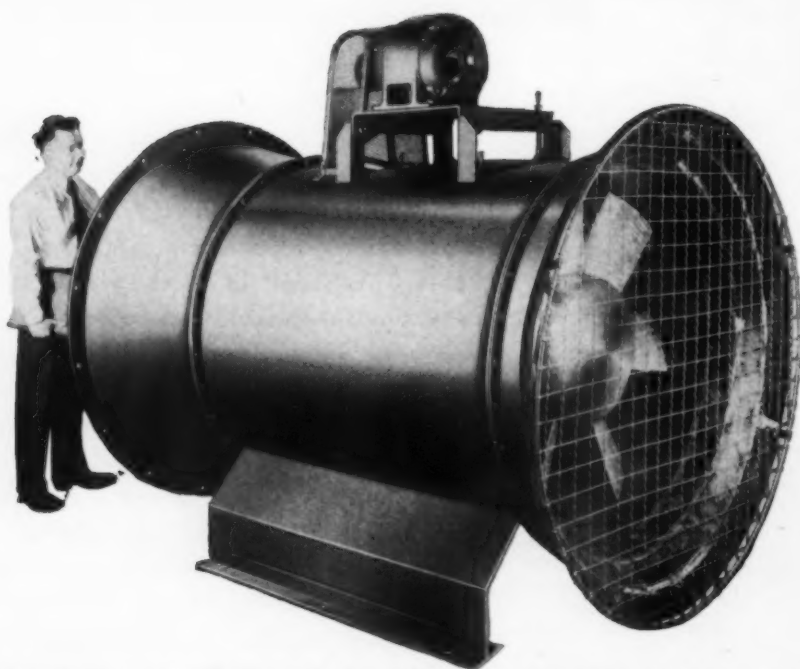
Not only is American-Standard direct mail advertising a powerful selling aid, but it also ties you in with our big national magazine advertising program. These and many other important selling tools are fully described in the new book, "Plan for Better Business." Ask your Wholesale Distributor for your copy. It shows you quickly how you can sell more heating jobs in your community. **American Radiator & Standard Sanitary Corporation, P. O. Box 1226, Pittsburgh 30, Pa.**

NATIONAL ASSOCIATIONS
 TRADE ASSOCIATIONS
 POST OFFICE
 PUBLIC MAIL
 PUBLIC ASSOCIATIONS
 SALVAGE DISPLAY
 POINT-OF-SALE LITERATURE
 HOME MADE
 MADE IN THE HOME
 CATALOG BOXES
 TOOL PACKAGING

LOOK FOR THIS MARK OF MERIT—It identifies the world's largest line of Heating and Plumbing Products for every use . . . including Boilers, Warm Air Furnaces, Winter Air Conditioners, for all fuels—Water Heaters—Radiators, Convectors, Enclosures—Gas and Oil Burners—Heating Accessories—Bathtubs, Water Closets, Lavatories, Kitchen Sinks, Laundry Trays, Brass Trim—and specialized products for Hospitals, Hotels, Schools, Ships and Railroads.

AIR EQUIPMENT TO HELP YOUR BUSINESS

*Simplifying the job for
the Man Who Installs-*



"BUFFALO" TYPE "B" VANEAXIAL and TUBEAXIAL FANS



In designing these light, sturdy, high-efficiency fans, we didn't forget installation and servicing problems! At left, note how easily "V" belts and sheaves are installed. Rear cap of center cylinder is readily removable. Here's a really workable fan for straight-line duct-mounting on walls or ceilings for 2000 to 60,000 cfm in a variety of pressures. A good choice of arrangements, too, to suit your need. **DO YOU HAVE THE LATEST DATA ON THESE PROVEN "BUFFALO" FANS?** Write us for new Bulletin 3533-C.

**BUFFALO FORGE
COMPANY**

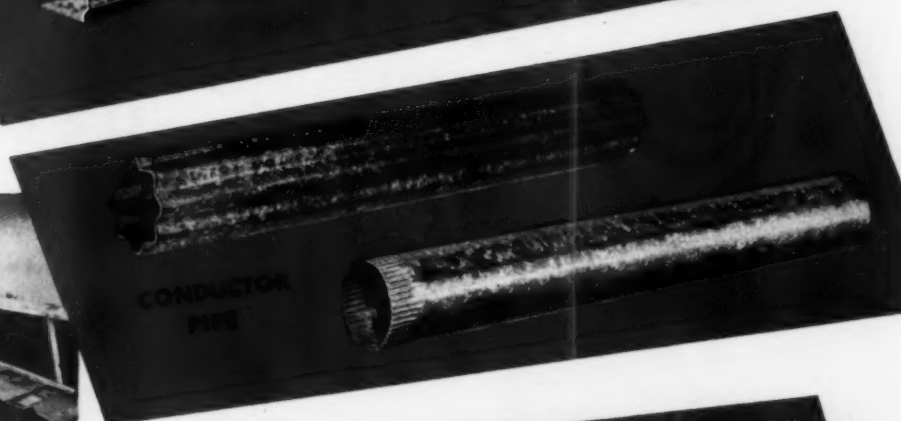
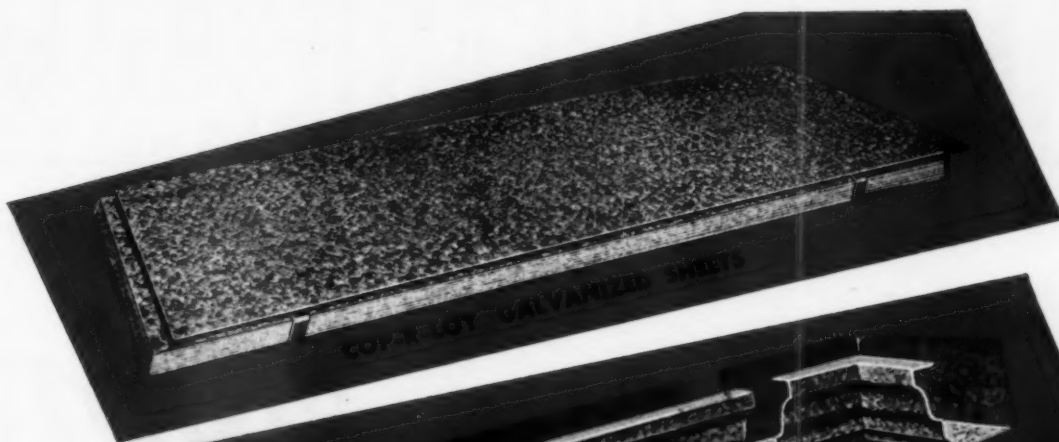
504 BROADWAY BUFFALO, N. Y.
Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

Branch offices in all principal cities

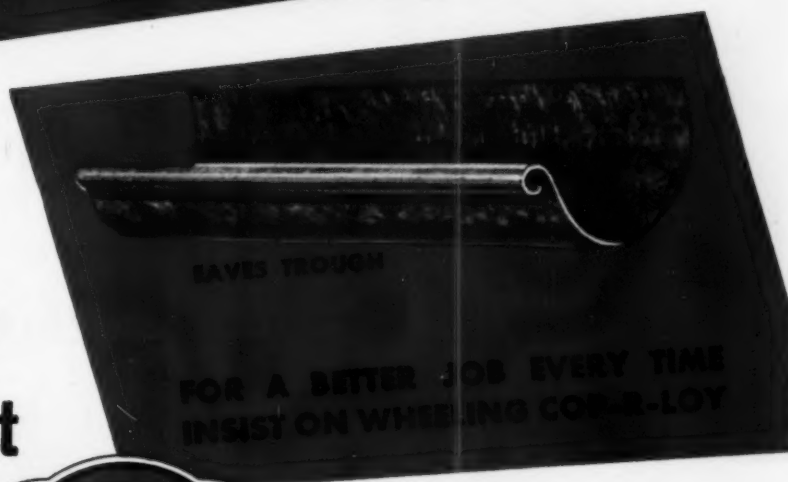
CUTTING AIR COSTS IN EVERY BRANCH OF INDUSTRY

**EQUIPMENT
FOR**

- ★ VENTILATING
- ★ HEATING
- ★ COMFORT COOLING
- ★ PROCESS COOLING
- ★ AIR TEMPERING
- ★ AIR WASHING
- ★ EXHAUSTING
- ★ BLOWING
- ★ FORCED DRAFT
- ★ INDUCED DRAFT
- ★ PRESSURE BLOWING
- ★ CLEANING
- ★ DRYING



GALVANIZED ROOFING



**Your Customers
like to know that**

YOU SELL



**COP-R-LOY
PRODUCTS**

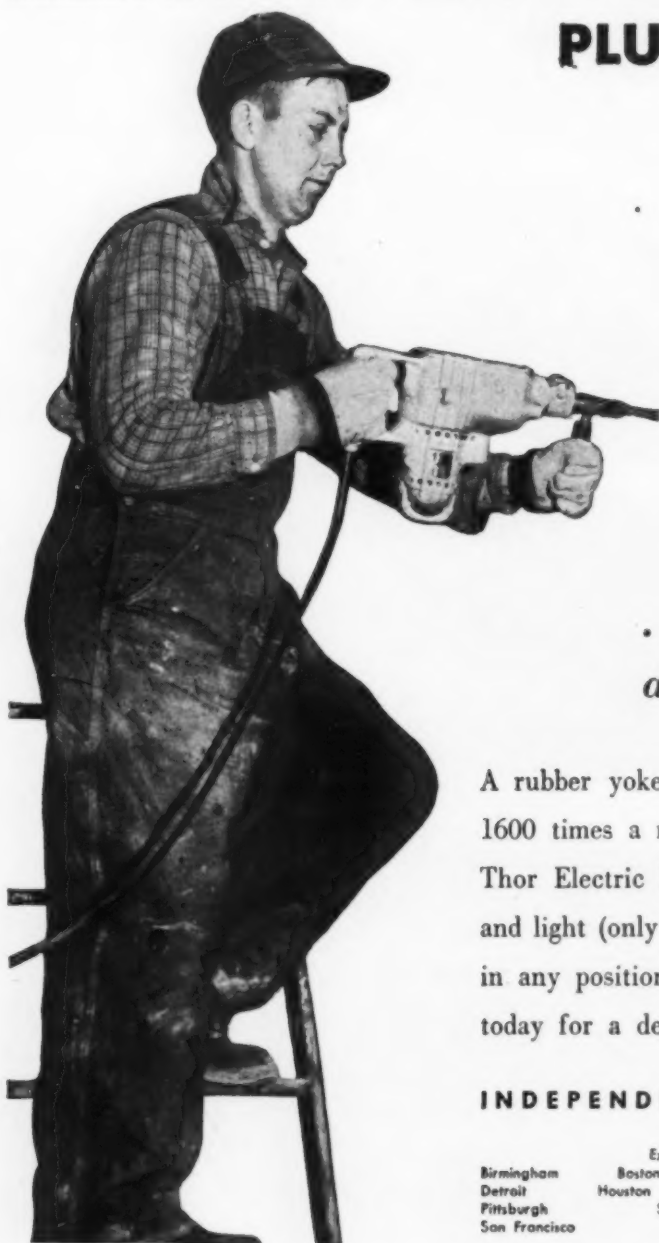
WHEELING CORRUGATING COMPANY • WHEELING, W. VA.

ATLANTA	BOSTON	BUFFALO	CHICAGO	CLEVELAND	COLUMBUS	DETROIT	KANSAS CITY
LOUISVILLE	MINNEAPOLIS	NEW ORLEANS	NEW YORK	PHILADELPHIA	PITTSBURGH	RICHMOND	ST. LOUIS

HANDLING EASE...

DRILLING IN CONCRETE • CHIPPING • GOUGING • CUTTING • SCALING • CHANNELING

PLUS *Sling Shot* POWER



Thor

ELECTRIC HAMMERS

*... get jobs done faster
at lower operating costs!*

A rubber yoke that "sling-shots" the piston back and forth 1600 times a minute, injects the extra power and speed into Thor Electric Hammers that gets jobs done faster. Compact and light (only 14 pounds), the Thor Hammer is easy to handle in any position. See for yourself—ask your Thor distributor today for a demonstration.

INDEPENDENT PNEUMATIC TOOL COMPANY

Aurora, Illinois

Export Division: 330 West 42nd Street, New York 18, N. Y.

Birmingham	Boston	Buffalo	Chicago	Cincinnati	Cleveland	Denver
Detroit	Houston	Los Angeles	Milwaukee	New York	Philadelphia	Seattle
Pittsburgh	St. Louis	St. Paul	Salt Lake City			
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... **Thor** ... **PORTABLE POWER** ...
TOOLS

PNEUMATIC TOOLS • UNIVERSAL AND HIGH FREQUENCY ELECTRIC TOOLS • MINING AND CONTRACTORS TOOLS

The MONCRIEF "HEATOMIC"

The **LITTLE** Unit that gets **BIG** results!



Series
AC-700-F

● Like the atomic bomb, Moncrief's "Heatomic" all fuels, air conditioning unit is the talk of the heating market—it's the unit that lets-you-in on any heating job. Here's a new design in a coal-fired air conditioning unit that can be readily converted at any time, even after installation, to burn oil, gas or for stoker firing.

The excellent design and construction of the rugged, steel heating element, with long fire travel and large heating surface provide the necessary qualifications for the versatility of this unit.



Series L
Gas-Fired, Steel
Air Conditioning
Unit



Series W
Gas-Fired, Steel
Gravity Furnace



Series U
Gas-Fired, Steel
Utility Air Con-
ditioning Unit



Series CL
Gas-Fired, Cast
Iron Air Con-
ditioning Unit



Series CU
Gas-Fired, Cast
Iron Utility Air
Conditioning Unit



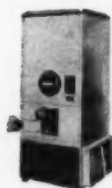
Series P
Oil Fired, Steel
Air Conditioning
Unit



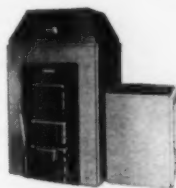
Series VW
Oil Fired, Steel
Gravity Furnace



Series VL
Oil Fired, Steel
Air Conditioning
Unit



Series VU
Oil Fired, Steel
Utility Air
Conditioning Unit



Series AC-700
Coal-Fired, Steel
Air Conditioning
Unit



Series C
Coal-Fired, Cast
Gravity Furnace



Series 700
Coal-Fired, Steel
Gravity Furnace

THE HENRY FURNACE COMPANY

Medina, Ohio

HEATING AND AIR CONDITIONING UNITS

MONCRIEF

SINCE 1895

FURNACE PIPE AND FITTINGS



Glass-enclosed sterile rooms of the Sharp and Dohme laboratories where vaccines and other biological products are bottled. Surgically clean, these rooms are ventilated by overhead ducts that carry filtered, conditioned air. Many of the ducts in the Sharp and Dohme laboratories were made from Beth-Cu-Loy Galvanized Steel Sheets.

Vaccines are processed in these air-conditioned rooms



Technicians testing vaccines for purity. Specially-conditioned air is delivered to this room by ceiling ducts. Ultra-violet light is used here as a further guard against contamination.

Air conditioning has come to play a vital part in the preparation of biological and pharmaceutical products for medical use.

An example is found in Sharp and Dohme's Philadelphia laboratories, where special air-conditioned sterile rooms have been provided for the processing of biological and sterile pharmaceutical products. The circulating air is conditioned, filtered, and finally sterilized by ultra-violet rays. This eliminates airborne bacteria, reduces contamination losses, and assures purity of the finished products.

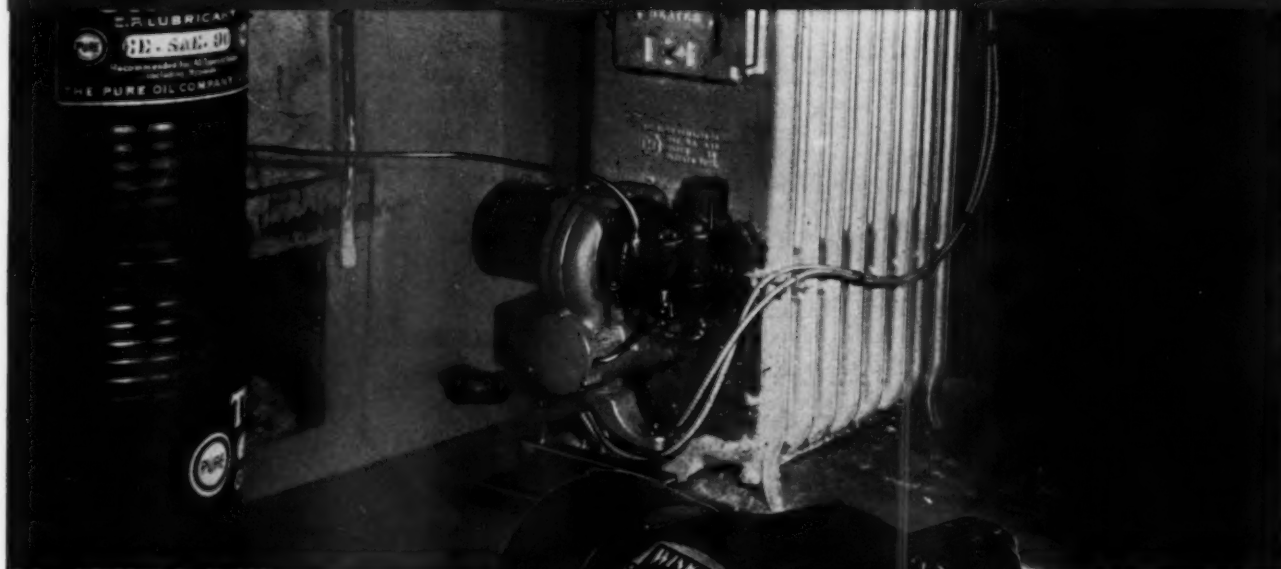
Many of the ducts that carry air through this plant are made from

Beth-Cu-Loy (copper-bearing) galvanized steel sheets. There are several sound reasons why Beth-Cu-Loy sheets are widely used for jobs of this kind. They have superior resistance to atmospheric corrosion. They are easy to handle, to cut, to seam, and to solder. And they cost very little more than ordinary galvanized steel sheets.

Bethlehem Steel Co., Bethlehem, Pa.
On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation.
Export Distributor: Bethlehem Steel Export Corp.



BURNS CRANKCASE DRAININGS BURNS CATALYTIC OILS BURNS JUST ENOUGH OIL



WINKLER CHALLENGES ANY OIL BURNER TO MATCH THIS PERFORMANCE

The Winkler LP* Oil Burner, $\frac{3}{4}$ GPH, pictured above is installed in a filling station. During a 60 day test period, this standard unit burned all crank case, transmission and rear axle drainings obtained by the station. When waste oil ran low, No. 4 oil was added—estimated to be less than 20% of all oil burned. No filter or dirt trap was used.

During the test run, the burner needed no adjustment or attention. The CO_2 content of the flue gas was 11% both at the start and end of the run, and no soot or smoke ever formed.

When the Fuel Unit was disassembled, it was found full of sand, steel chips* and sludge—yet the burner operated perfectly and the nozzle was free and unobstructed.

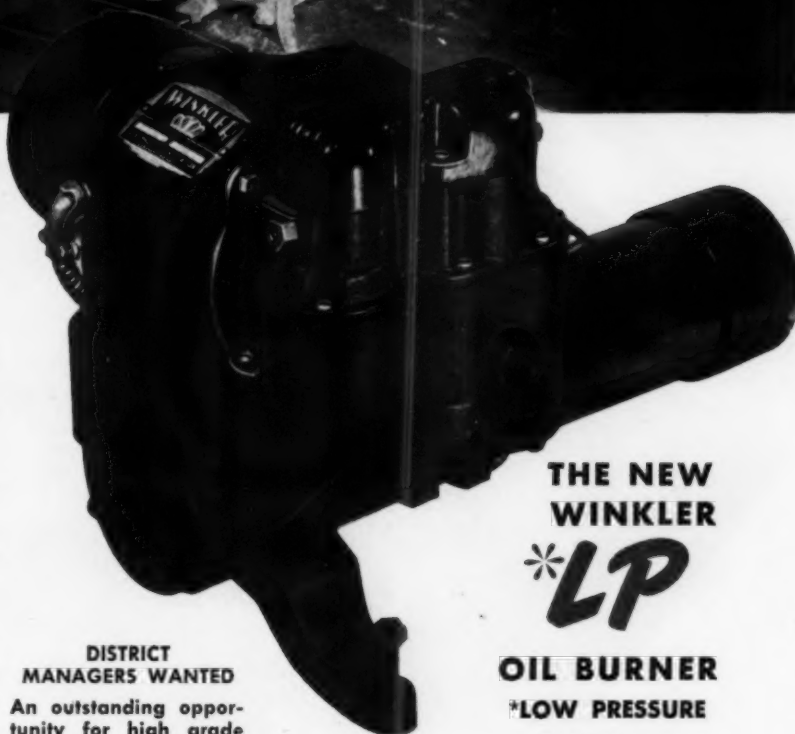
Could you ask for better proof of the service-free dependability of the rugged Winkler LP* Burner?

SAVES UP TO 50% IN OIL

The amazingly low fuel consumption of the Winkler LP* Burner is primarily due to the fact that it can be properly sized to the smaller heating plant. It will burn as little as $\frac{3}{4}$ gallons per hour—ending the waste of heat caused by over-sizing the burner to prevent nozzle clogging.

THE WINKLER *Econo-Flame*

A radically improved design in high pressure burners. Features the Deflecto-Air principle—producing correct oil—air pattern for complete combustion. This burner gives hi-pressure operation at its best.



THE NEW WINKLER *LP OIL BURNER *LOW PRESSURE

Featuring—

1. Non-clogging service-free Nozzle
2. Exclusive super-efficient Air Cone Stabilizer
3. Exclusive positive displacement Fuel Metering Unit

DISTRICT MANAGERS WANTED

An outstanding opportunity for high grade men to make substantial earnings in franchised territories. Write today, giving full information on your qualifications.

WINKLER

Automatic Heating Equipment

U. S. MACHINE CORPORATION, Dept. AP-6, Lebanon, Indiana

NICE WORK—and you can get it

when you know how to handle Stainless Steel

THERE'S no good reason why your shop shouldn't be busy on the many profitable jobs that can be built better with Stainless Steel. If your men can handle galvanized steel they can handle Stainless. For working with Stainless is *not* difficult—it's just different. It requires just a little more care in some of the fabricating operations. A well-equipped shop will require no new tools or special equipment. A good crew can quickly master Stainless fabrication.

Remember too, that Stainless Steel jobs are profitable—and in more ways than one. For they build up your reputation, get you into a class of specialty work that pays off in bigger returns and more important business.

What's more, you can get Stainless Steel.

Though other materials are still difficult to obtain, U·S·S Stainless Steel is available for *almost immediate delivery*.

If you need sheets in No. 2B or No. 4 finish; bars that meet high standards of machinability; plates in sizes up to 120" wide and 360" long; welded or seamless tubing; or pipe, angles and channels—and want them quickly—contact your regular supplier.

If he does not have U·S·S Stainless Steel on hand at the moment, phone, wire or write one of the warehouses of United States Steel Supply Company. There's one in your town or not far away.



U·S·S STAINLESS STEEL

SHEETS · STRIP · PLATES · BARS · BILLETS · PIPE · TUBES · WIRE · SPECIAL SECTIONS

8-364

UNITED STATES STEEL

AMERICAN STEEL & WIRE COMPANY, Cleveland, Chicago & New York
CARNegie-ILLINOIS STEEL CORPORATION, Pittsburgh & Chicago · COLUMBIA STEEL COMPANY, San Francisco
NATIONAL TUBE COMPANY, Pittsburgh · TENNESSEE COAL, IRON & RAILROAD COMPANY, Birmingham
UNITED STATES STEEL SUPPLY COMPANY, Warehouse Distributors—Coast to coast: UNITED STATES STEEL EXPORT COMPANY, New York

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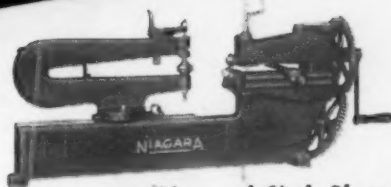
TINNERS TOOLS *and* MACHINES

for SHEET METAL SHOPS

Niagara offers America's most complete line of tinnery tools, machines, power presses and shears for production and maintenance. Whether you require hand, foot or power operated equipment, — you get the best when you specify Niagara. Write for catalog 94.



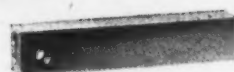
Slip Roll Former



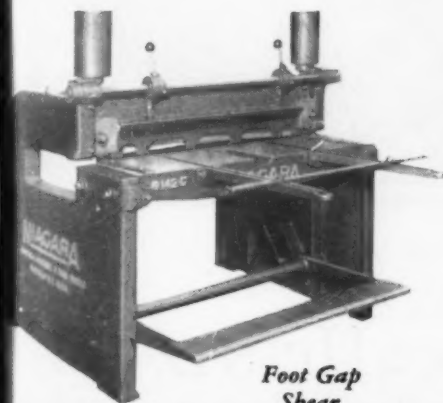
Ring and Circle Shear



Snips



Rivet Sets and Headers



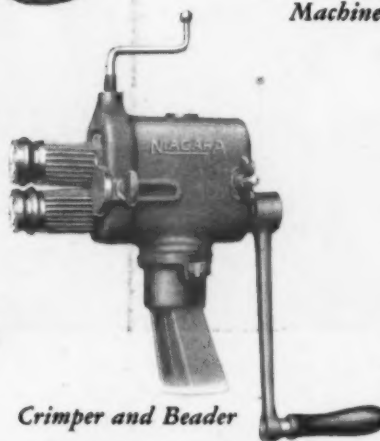
Foot Gap Shear



Hollow Punches



Hand Groovers



Crimper and Beader

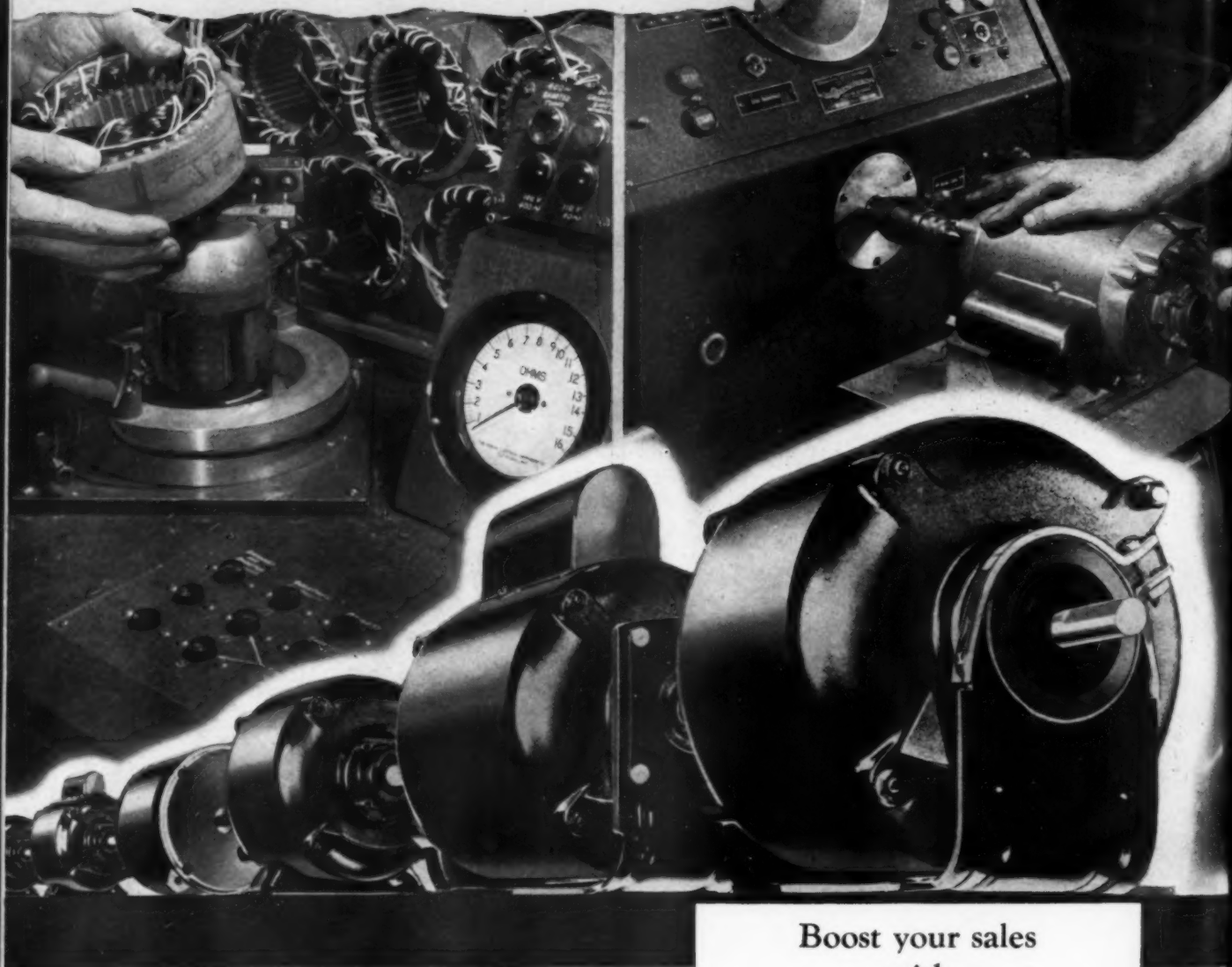


Electric Combination Machine

NIAGARA

NIAGARA MACHINE AND TOOL WORKS, BUFFALO 11, N.Y.
DISTRICT OFFICES: NEW YORK, CLEVELAND, DETROIT

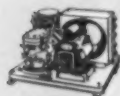
Tryout for toughies



Electric Motors



Ball Bearings



Refrigeration Compressors



Eisemann Magnets

You can bank on J & H Motors staying on the job. New and improved precision-testing equipment, such as the stator tester and torque tester shown above, makes each J & H Motor *prove* that it is as rugged as they come...able to take the toughest treatment for years and years. More than a million of these quiet, dependable motors already are in service. Write for full information on the J & H Motor franchise for your area.

Boost your sales
with

JACK & HEINTZ
Better electric motors

BACKED BY  COAST-TO-COAST SERVICE




Aircraft Starters



Aircraft Generators



Aircraft Inverters

JACK & HEINTZ  **PRECISION INDUSTRIES, INC.,** Cleveland 1, Ohio

D-86

AMERIC



With Mueller Climatrol— Fuel Dollars *Go Farther*

Climatrol "budget-appeal" helps you sell

You sell *low fuel bills* when you sell Mueller Climatrol. And that's what home-owners want when they buy a furnace. *You* can give them full comfort value for every dollar they spend on fuel — for years to come. That's the story to tell, because that's the story that sells!

And you know it's true. You know that all Mueller Climatrol units are scientifically designed. You know the care with which they are built. That's why you can back the line you sell against any other — on any basis. Mueller gives your customers top comfort,

top appearance, top convenience, top service. And above all gives top fuel economy.


Sell that story to new-home builders. Sell it to home-owners who have a furnace that brings them "waste-high" fuel bills. Sell it to folks who want to heat with gas, or coal, or oil. You have the answer to any need, in the Mueller Climatrol line. And your story is backed by Mueller's 91-year record. That's why it pays to sell Mueller Climatrol. Write for latest literature. *L. J. Mueller Furnace Co., 2010 W. Oklahoma Ave., Milwaukee, Wis.*

MUELLER

Climatrol

REG. U. S. PAT. OFF.





Tri-Flex
26 sizes

8 x 4
10 x 4
10 x 6
12 x 4
12 x 5
12 x 6
14 x 4
14 x 5
14 x 6
16 x 5
16 x 6
20 x 5
20 x 6
20 x 8
24 x 5
24 x 6
24 x 8
24 x 10
24 x 12
30 x 6
30 x 8
30 x 10
30 x 12
36 x 8
36 x 10
36 x 12

Aerovane
20 sizes

10 x 6
10 x 8
12 x 6
12 x 8
12 x 12
18 x 6
18 x 12
18 x 18
24 x 12
24 x 18
24 x 24
30 x 12
30 x 18
30 x 24
36 x 18
36 x 24
36 x 30
48 x 24
48 x 30
48 x 36

**TAKE ADVANTAGE OF
COST SAVINGS WHEN
YOU SELECT
AIR CONDITIONING
GRILLES and REGISTERS**

Specify...Install

T&B STANDARDS



Available as Grille, Double Deflection
Grille (shown), Multi-Shutter Register, or
Double Deflection Multi-Shutter Register

Tri-Flex

Aerovane



Available as Grille,
or Register (shown)

When you plan the grilles and registers for your next air conditioning job, plan efficiency with popular T&B STANDARDS . . . your answer for practically all commercial, industrial and institutional requirements.

Standardization of TRI-FLEX and AEROVANE sizes, resulting in mass production methods, means real savings . . . an important consideration in the face of rising construction costs.

And there are other advantages. On-the-shelf stock assures quick delivery . . . standardization eliminates guesswork in selecting correct sizes.

For detailed description, engineering data and complete information that will aid specifying and installing, write for a copy of Bulletin 47TF.

TUTTLE & BAILEY



NEW BRITAIN, CONNECTICUT

COPPER

actually costs less!

1. QUICKER—EASIER TO FABRICATE!
2. PERMANENT—NO "CALL-BACKS"!
3. SATISFACTION BRINGS NEW BUSINESS!

HUSSEY
Lifetime
COPPER



C. G. HUSSEY & CO.
(Division of Copper Range Co.)

Rolling Mills and General Offices: PITTSBURGH, PA.

Hussey Warehouses Carry Stocks of Copper and Brass Products for Prompt Delivery

Question:

Why is it easy to "sell"
a **PETRO**
replacement burner?

Answer:

To end once and for all the costly upkeep of their worn-out, fuel-hungry burners, homeowners are insisting on a replacement burner with an established reputation for oil economy and durability. And so they are choosing Petro.

For they've learned about the fuel savings in Petro's exclusive "tubular atomization." Incorporating 45 years' specialized oil heating "know-how," a Petro provides high combustion efficiency and rugged construction that assure season to season dependability with minimum attention.

Be ready when they ask you about Petro. Now is the time to contact the Petro heating and plumbing jobber in your wholesale trading area. He has the details you want on the whole Petro line—including water heaters, boiler-burner and furnace-burner units as well as conversion oil burners.

**PETROLEUM
HEAT AND POWER COMPANY**
Stamford, Connecticut

*Makers of Good
Oil Burning Equipment Since 1903*
REFINERIES... FUEL OIL STORAGE AND DISTRIBUTION TERMINAL
NATIONWIDE OIL BURNER SALES AND SERVICE FACILITIES



Here's
cator
never
Fibe
weight
both su
to the
surface

AND

AMERICAN

FIBERGLAS^{*} Coated **DUCT INSULATION**



- ★ **HIGHLY EFFICIENT**
- ★ **NONCOMBUSTIBLE**
- ★ **LIGHT IN WEIGHT**
- ★ **EASY TO APPLY**
- ★ **A VERSATILE SURFACE FOR FINISHES**

Here's a new duct insulation that offers—to the applicator and his customer—a combination of advantages never before available in a duct-insulating material!

Fiberglas *Coated* Duct Insulation is efficient, lightweight Fiberglas Insulating Board with a coating on both surfaces. This coating improves handleability, adds to the insulation's appearance and provides an ideal surface for finishes.

A boon to the applicator, this duct insulation can be installed easily and quickly. It may be cut accurately with a knife to conform to irregular shapes and curved surfaces. The coated surface may be readily painted, or covered with asbestos paper or canvas.

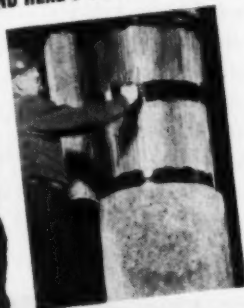
Fiberglas *Coated* Duct Insulation provides highly efficient insulation against heat or cold. The glass fibers of which it is made are noncombustible—will not rot or decay—do not corrode metals—cannot absorb moisture.

If you're looking for an easy-to-apply product that provides a neat and lasting insulation for hot or cold ducts, investigate Fiberglas *Coated* Duct Insulation now! Low initial cost and economy of application should make this product your first choice. Just fill in and mail the coupon below. Owens-Corning Fiberglas Corporation, Toledo 1, Ohio. Branches in principal cities.

In Canada: Fiberglas Canada Ltd., Toronto, Ontario.

AND HERE'S ANOTHER OUTSTANDING PRODUCT FOR DUCTS ...

FIBERGLAS *Flexible*
DUCT INSULATION



An extremely lightweight thermal insulation made of superfine glass fibers, this duct insulation is designed primarily for concealed ducts on which finishes are not needed. This highly flexible product has a low thermal conductivity ... is firesafe ... noncorrosive ... easy to apply.

OWENS-CORNING
FIBERGLAS

THEME
**THERMAL
 INSULATING
 MATERIALS**

MAIL COUPON FOR COMPLETE INFORMATION

Owens-Corning Fiberglas Corporation
 Department 930
 Toledo 1, Ohio

Yes! Please send me more information on the new Fiberglas Duct Insulations.

NAME _____ TITLE _____
 COMPANY _____
 STREET AND NUMBER _____
 CITY _____ ZONE _____ STATE _____

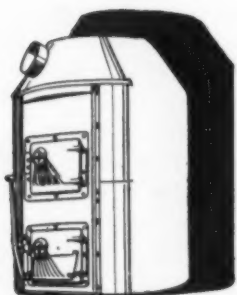
FURNACES offer your customers **Complete FLEXIBILITY!**

Greatest ease in converting ... FROM COAL ... TO OIL ... OR GAS

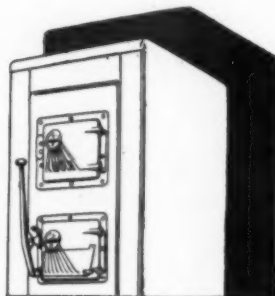
Certified coal fired COUNTERFLOW and GRAVITY type furnaces are quickly convertible to either gas or oil.

Certified's own gas conversion burner and oil burner are designed to fit all Certified furnaces. Thus conversion can be accomplished in a matter of hours. Hand firing can become stoker firing with equal ease.

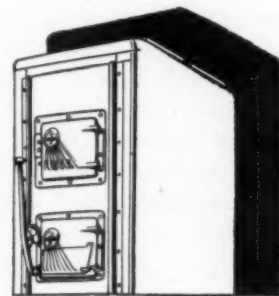
Complete flexibility of conversion afforded by Certified Furnaces assures your customers that they will be able to enjoy continuous heating comfort through any type of prolonged fuel crisis.



The Certified (round) GRAVITY type coal burning furnace is constructed of boiler plate steel throughout. With coal, coke or wood, combustion is thorough, heating efficiency high.



The Certified (square) GRAVITY type coal burning furnace embodies all of the fine features of the round type plus the distinctively styled outer steel shell, beautifully finished in baked enamel.



The Certified COUNTERFLOW coal fired furnace features a smartly designed, completely enclosed, double bodied unit with greatly increased heat transferring surfaces. Operation is economical, appearance attractive.



CERTIFIED FURNACE CO.

DIVISION OF STAINLESS & STEEL PRODUCTS CO.

1000 BERRY AVENUE

SAINT PAUL 4, MINNESOTA

Busi
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truck
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CHEVRO

CHOC
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AMERICA



You Can Count On

NEW ADVANCE-DESIGN CHEVROLET TRUCKS

For More Value — In More Ways — On Your Job

Business leaders everywhere recognize the new high value of these latest and greatest Advance-Design trucks! You'll agree, too—once you see and once you try these trucks that represent the supreme achievement of advanced engineering. And they're the lowest-priced trucks in the volume field! Model for model, and with comparable equipment and specifications, they *list for less than competitive makes*—some models as much as \$150. See them at your dealer's now.

CHEVROLET MOTOR DIVISION, General Motors Corporation,
DETROIT 2, MICHIGAN

**CHOOSE CHEVROLET TRUCKS FOR
TRANSPORTATION UNLIMITED**

AMERICAN ARTISAN, June, 1948

Only Chevrolet Advance-Design Trucks for 1948 Have All These New and Finer Features

NEW CHEVROLET 4-SPEED SYNCHRO-MESH TRUCK TRANSMISSION

A special feature in heavy-duty models that assures new operating ease and efficiency.

NEW ADVANCE-DESIGN GEARSHIFT CONTROL

A steering column gearshift in models with 3-speed transmissions provides greater driving ease and convenience.

NEW FOOT-OPERATED PARKING BRAKE

A feature that offers new clear floor area, safety and efficiency in models with 3-speed transmissions.

NEW IMPROVED VALVE-IN-HEAD ENGINE

The world's most economical engine for its size now has greater durability and operating efficiency.

SPLINED REAR-AXLE SHAFT ATTACHMENT TO WHEEL HUBS

Greater strength and durability in heavy-duty models with this exclusive Advance-Design feature.

PLUS The Cab that "Breathes"*

- Uniweld, all-steel cab construction
- New, heavier springs
- Full-floating hypoid rear axles on ¾-ton and Heavy Duty models
- Specially designed brakes and Hydrovac Power brakes on Heavy Duty models
- Ball-bearing steering
- Double-line pre-selective power shift in 2-speed axle at extra cost
- Wide base wheels
- Standard cab-to-axle-length dimensions
- Multiple color options.

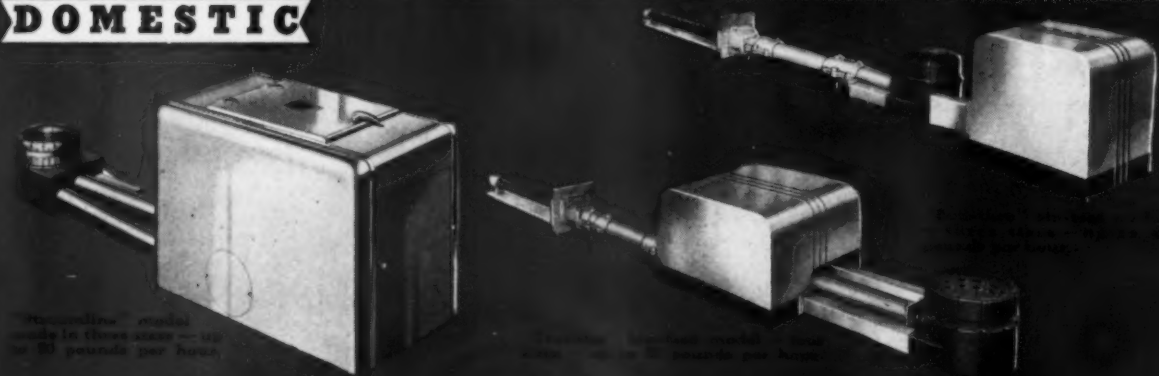
*Fresh air heating and ventilating system optional at extra cost.



LINE UP WITH ECON-O-COL

Time-tested for Performance • Sales-tested for Profits!

DOMESTIC



COMMERCIAL



INDUSTRIAL



ECON-O-COL
Automatic
COAL BURNER

ECON-O-COL

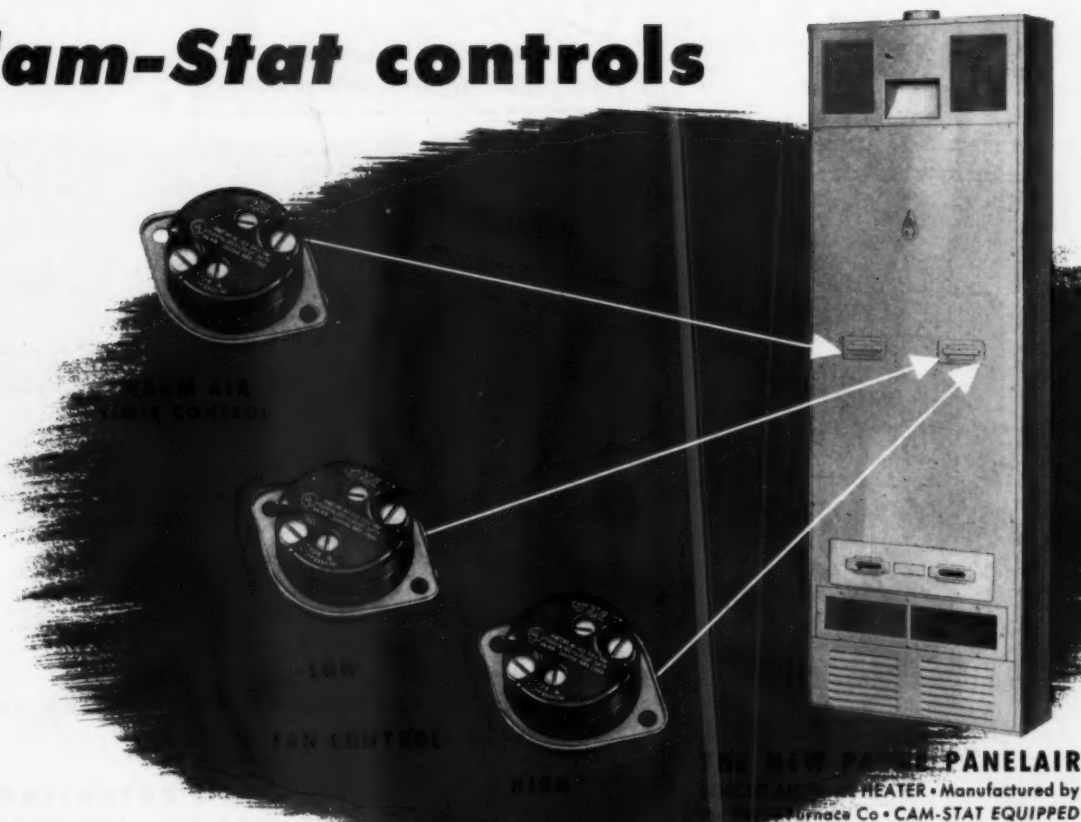


THE SHIELD
OF QUALITY

The "Stronghearted" Stoker

MANUFACTURED BY COTTA TRANSMISSION
CORPORATION ★ ROCKFORD, ILLINOIS

Another major application of **Cam-Stat controls**



CAM-STAT CONTROLS NOW BEING USED BY MANY LEADING FURNACE MANUFACTURERS

Cam-Stats, the temperature controls so widely used in the water heater field, are now finding wide application in the oil and gas furnace industry. Payne Furnace Co., for example, utilizes three Cam-Stats—for warm air limit control and high and low fan control. Other major manufacturers use Cam-Stats for fan and limit controls on unit heaters.

QUICKLY AND EASILY INSTALLED

Universally designed Cam-Stat controls fit any heater. Because they are small and compact—barely larger than a silver dollar—they are installed with remarkable ease and speed in a minimum of space.

PRE-SETTING ELIMINATES ADJUSTMENTS

Temperature limits are factory pre-set so that proper performance is assured at all times without further adjustments after installation.

SPECIFICATIONS: Current carrying capacity—1500 Volt Amps and $\frac{1}{4}$ H.P. at 115 V.A.C. without necessity of condenser; temperature ranges (pre-set to your requirements) from 50 to 350 degrees F.; switching arrangements—SPST break or make on temperature rise, SPDT and independent circuit double throw; for low voltage application, Cam-Stats are available with platinum contacts; compact design—only 1-9/16" in diameter, 1-13/32" in depth.

For complete details write to Dept. AA-6.

Division of **THE PAUL HENRY COMPANY**
2310 SOUTH LA CIENEGA • LOS ANGELES 34, CALIFORNIA

LISTED BY UNDERWRITERS' LABORATORIES



*On those summer
check-ups*
**Don't overlook the
float valve sales**

Want some extra profits? — better still, some practically effortless profits? Then just have your men make it an iron clad rule to check the condition of the float valve of the humidifier pan on every service call. If you do, you'll be surprised at how many McDonnell Snap Action Float Valves you'll sell.

Finding needs for dependable McDonnell Float Valves is like shooting fish in a barrel because so many of the furnaces in service are equipped with old style "dribbler" float valves that are often plugged up or otherwise inoperative—usually beyond repair. When you replace such valves with the McDonnell Snap Action Float Valve you do the furnace owner a real service. It is the first real *engineered* float valve for humidifier pans as explained opposite.

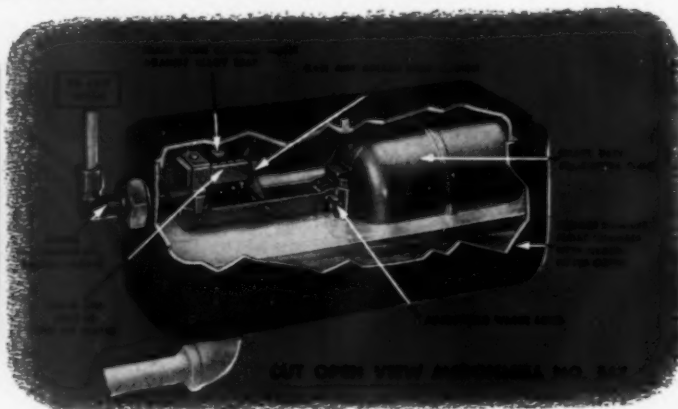
In today's mail a Wisconsin contractor writes: "Please send us a No. 517 float valve adaptable to any old furnace." We don't know just how he meant "any old furnace," but we know how we took it. We suspected the happy idea had just struck him that it's open season for float valves on any old furnace, any old place, any old time.

And it is! . . . if you check the humidifier valve on every service call — burner adjustment, filter replacement, fire pot repair, or whatever it is. Ask for details and surprisingly moderate prices. McDonnell Snap Action Valves are optional equipment on most good furnaces; so be sure to specify them on the new furnaces you order.

MCDONNELL & MILLER, INC.
1318 Wrigley Building, Chicago 11, Illinois

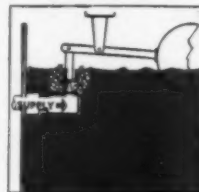
Doing One Thing Well
REG. U. S. PAT. OFF.

MCDONNELL Snap Action FLOAT VALVE



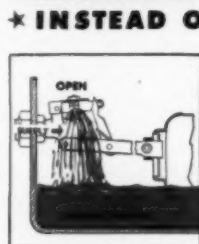
McDonnell Float Valves are available without float chamber (No. 417) or mounted in a sturdy die cast chamber with neat, well-fitted cover (No. 517). One of these is adaptable to any furnace, old or new.

**The engineered float valve for
humidifier pans**



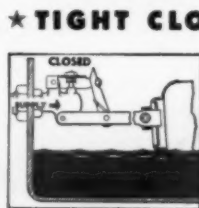
**★ NO DRIBBLING
ACTION LIKE THIS!**

Valves that just dribble water as shown here, don't dribble very long before they clog up with lime and debris.



**★ INSTEAD OF DRIBBLING, SNAP
ACTION LIKE THIS;**

An ingenious cam and roller mechanism snaps the McDonnell Float Valve wide open when float falls 1/4 inch . . . opens up full stream that flushes out and keeps it operative.



★ TIGHT CLOSING TOO!

When water level is restored the valve snaps to a tight seal . . . bottle tight against water supply pressures up to 150 lbs. Note also that valve and seat are up out of the water.

And this is only the start of the story. Other features are the provision for adjusting water level; the heavy gauge pure copper float (not just copper plated); the monel strainer as an added protection of the valve.

FOR
YOU

2

PROFITABLE
CONNECTIONS

SNO-BREZE COOLERS

and

**Palmaire
HEATERS**

SNO-BREZE EVAPORATIVE
COOLERS



Guaranteed
air delivery.
Certified cooling
performance.

You completely cover this tremendous sales potential with a Sno-Breze model, type and size for every need.

Residential Building	Commercal Building	Governmental Building
Trailers to Estates	Retail, Manufacturing, Distributing	City State National

And Remember, you are backed by progressive, energetic engineering, manufacturing, selling and advertising policies that keep Sno-Breze the "recognized leader" in the evaporative cooler field.



Palmaire SUSPENDED UNIT
HEATERS

The main stays, of course, are the improved ever popular suspended Palmaire U.F. 100,000 and U.F. 190,000 BTU gas fired heating units. These ceiling heaters have marked another milestone in heating achievement for Palmaire engineers. "These units practically sell themselves," say dealers, "and each Palmaire unit sold means another satisfied customer."

Remember too Palmaire heating units are F.O.B. destination.



--- 39 Years of Air Conditioning Leadership ---

PALMER MANUFACTURING CORP., PHOENIX, ARIZONA, DEPT. A-7

Gentlemen: We are distributors..... Dealers.....

Please send free literature on Sno-Breze Coolers..... Palmaire Heaters..... Both.....

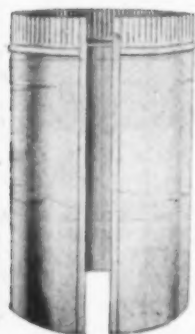
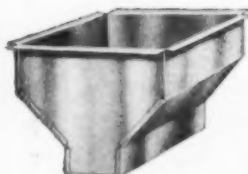
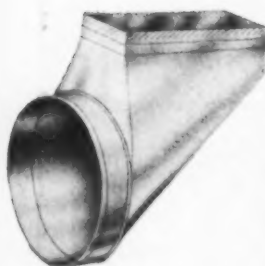
NAME.....

ADDRESS.....

CITY..... ZONE..... STATE.....

MAIL
COUPON
TODAY
FOR FULL
DETAILS!

Showing just a few
Char-Gale fittings



CHAR-GALE ALUMINUM *Fittings*

THE ANSWER TO SUCCESSFUL
AND PROFITABLE FURNACE
INSTALLATION

Feather Light



The easiest handling fittings ever made! Cut strain and time on installations—cut transportation time and cost—cut handling time on the job.

Stronger - Longer Lasting



Rustproof clear through! Installations are stronger with aluminum—last years longer.

Better Looking



More customer satisfaction! The smooth, bright beauty of these fittings does not discolor with heat or time. Needs no painting or covering—just naturally beautiful.

And It Costs No More!



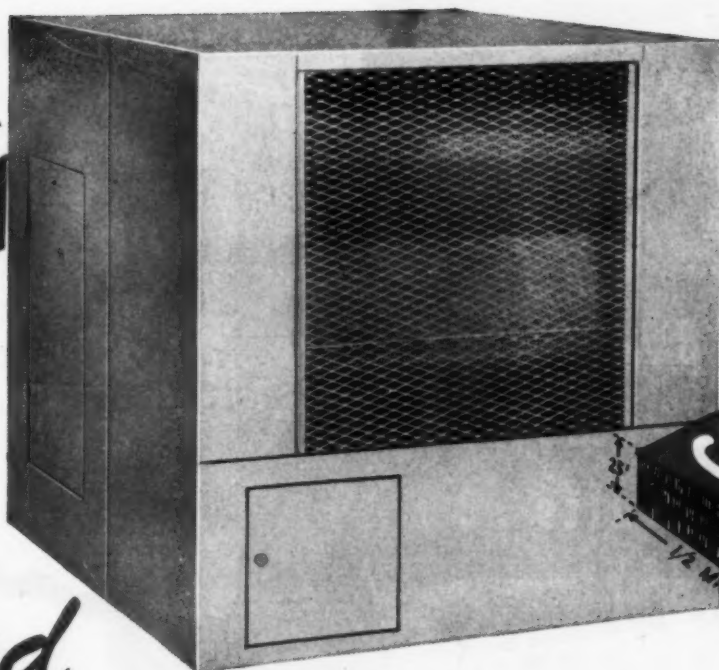
MINNEAPOLIS
OMAHA

ANOTHER PRODUCT OF CHAR-GALE METAL CRAFTSMEN

"NO HEATING PLANT IS BETTER THAN ITS INSTALLATION — NO INSTALLATION CAN BE BETTER THAN ONE OF CHAR-GALE FITTINGS"



Comfort Air Washer
No. 50-W—Capacity
5000 c.f.m.



COOL, SERVICE-FREE COM-
FORT... FOR THE COMFORT
AIR WASHER DEALER, TOO



Lead WITH THE Leader

Greater cooled-air volume, sustained
season after season—at lowest final cost.

Comfort Air Washers supply up to three times as much properly cooled air as ordinary coolers of similar rating... season after season, without let-down in volume or cooling efficiency... fresh air, thoroughly washed and cooled—at final costs that are much lower.



Sensational New Plug-In Window-type Comfort Cooler with manual-fill reservoir and water pump.

The complete COMFORT line covers all residential and commercial-industrial-institutional installations, including this manual-fill, self-pumping, plug-in window-type cooler for instant installations beyond water mains.

Comfort Air Washers and Coolers are mass-produced for economy in cost and pricing. Easy and convenient to install... nationally known and powerfully advertised, with an intensive program of dealer sales cooperation and generous profits to the trade.

Lead with the leader. Sell satisfaction—enjoy freedom from hot-weather service trouble. Write for the complete fact story of the Comfort 4-Way Air Washer and franchise opportunities in your section.

Comfort Products Corporation

2220 Lamesa

Dallas 2, Texas

BETTER IN 8 BASIC WAYS

1. Full-rated, generous Air Capacity, permanently maintained... no deterioration in capacity.
2. Pre-washing of Air Supply—ahead of the filters... avoids clogging of filter mats and maintains cooling capacity.
3. Ten-fold, unfailing Water Supply... with the unique "Water Flinger"... for maximum evaporation and cooling effect.
4. Filter Pads "Stair-stepped"... giving 33 1/3% more filtering and evaporative effect.
5. Non-organic Fiberglass Filtering Units—avoiding growth of algae and fungi.
6. Humidity reduced and controlled by the Comfort Baffle Filter.
7. A pleasant breeze—not a noisy draft... due to oversize Turbine Blower turning at "loafing" speed.
8. Soundly designed and adequate Duct Systems... for best cooled air distribution.





National Advertising and Sales Promotion that gets results . . .

"We are very much pleased with the leads furnished us, both as to quality and quantity, having been able to close several good deals. The national advertising and the newspaper ads you prepared for us seem to be doing a fine job."

Typical letters received from dealers praising ads that produce leads.

... ONE OF THE "BASIC 6" THAT MAKE CHRYSLER AIRTEMP A BETTER LINE TO SELL!

Flip the pages of the Saturday Evening Post, Newsweek, and other national magazines and you'll see convincing evidence that Chrysler Airtemp backs its dealers with consistent, hard-hitting national advertising. Newspaper ads, posters, radio commercials, etc., are prepared for the dealer—and the factory shares the cost. These hard-hitting ads produce inquiries aplenty, which are promptly passed on to the dealer. Sales manuals and training literature covering all lines are provided to help you train your sales-and-service personnel.

Powerful advertising support is just ONE of the "Basic 6" factors essential for a profitable dealership—and Chrysler Airtemp gives you ALL 6! Before you make a decision, look into Airtemp—send for full franchise information *today*. We're certain you will consider it time well spent!

**"THE
BASIC 6"**

**ESSENTIAL FOR A PROFITABLE
DEALERSHIP!**

CHECK THEM—

- 1 Products Engineered for Finest Performance
- 2 Ample Facilities for Modern Engineered Production
- 3 A Well-known and Trusted Name
- 4 Products to Sell Every Month in the Year
- 5 Factory-trained Sales-and-Service Personnel
- 6 National Advertising and Sales Promotion That Bring Results

SEND TODAY FOR DETAILS!

Airtemp Division of Chrysler Corporation
Dayton 1, Ohio

Please provide me with information concerning Chrysler A-A-6 Airtemp dealer agreements.

Name _____

Business _____

Address _____ State _____

City _____

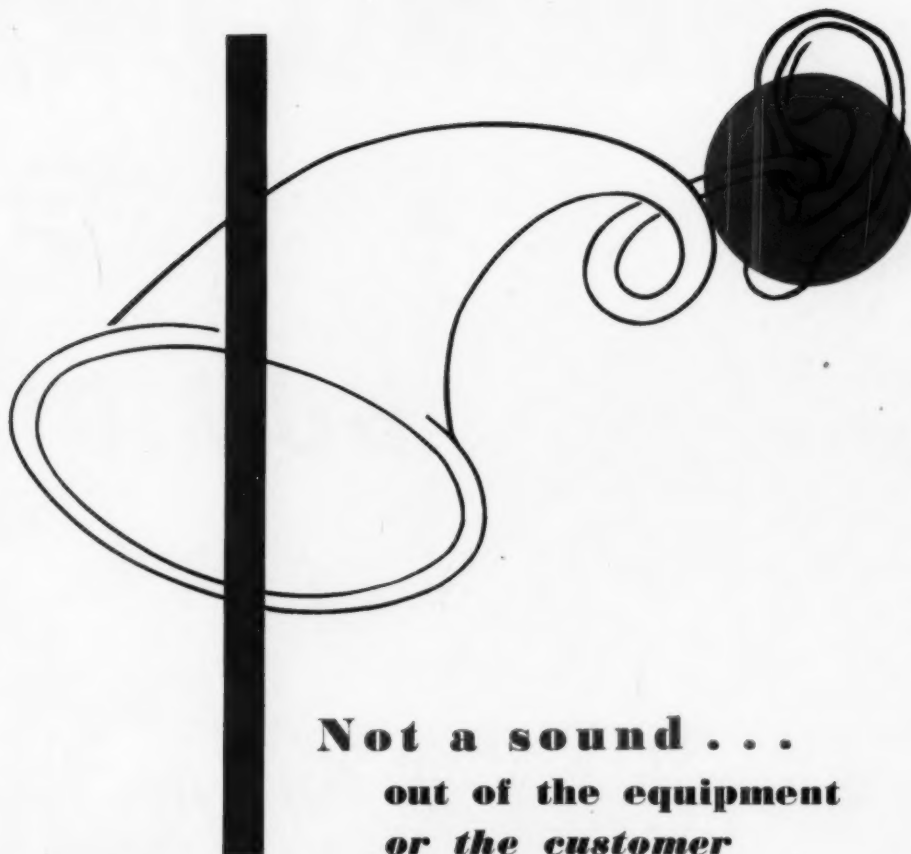
I am interested (check) Heating _____

Cooling _____ Refrigeration _____



**AIR CONDITIONING • HEATING
COMMERCIAL REFRIGERATION**

AIRTEMP DIVISION OF CHRYSLER CORPORATION
Dayton 1, Ohio
In Canada: Therm-O-Rite Products, Ltd., Toronto



**Not a sound . . .
out of the equipment
or the customer**



STREAMLINER One Piece Steel Housing Pillow Block. Housing formed around ball reduces cross-section area, gives maximum air flow. Mounts in any position.

See how Randall's exclusive oil-plus-graphite double-lubrication keeps shafts running quieter . . . longer. And check Randall's complete line of self-lubricating, self-aligning pillow blocks. Write for Catalog 47.

You're sure of customer satisfaction when you standardize on quieter, longer lasting Randall Pillow Blocks.

Only Randalls are *double-lubricated*. Plugs and grooves of lubricating graphite are part of the precision-machined phosphor bronze bushing . . . and oil from big single or double reservoirs provides additional protection. *Double-lubricated* Randalls deliver silent, dependable service . . . for the life of the equipment.

REPRESENTATIVES CARRYING STOCKS

The Berry Bearing Co.
Chicago 16

Edward D. Maltby Co., Inc.
Los Angeles 15, San Diego,
Phoenix, Honolulu

C. W. Marwedel
San Francisco, Oakland

Moffatt Bearings Company
Philadelphia 30, Baltimore,
Richmond, Charlotte, Atlanta

Salt Lake Hardware Co.
Salt Lake City 9

Syracuse Bearing Co.
Syracuse 2, Buffalo 8, Utica
Niagara Falls, Rochester 13

Tek Bearing Company
Albany, Boston, Bridgeport,
Newark, New York, Providence

Dominion Bearings, Ltd.
Toronto 4, Ontario

Pumps & Power, Ltd.
Vancouver, B. C.

Goyanes y Alvarez
Havana, Cuba

RANDALL GRAPHITE BEARINGS Inc.

Dept. 611, 609 West Lake Street, Chicago 6, Illinois

THERMO-DRIP

HEAT REGULATED

HUMIDIFIERS

FOR EVERY
TYPE or MAKE
OF WARM AIR FURNACE

Low Cost Thermo-Drip Humidifiers are the most efficient in the heating field today... attach quickly and easily to any type or make of furnace... adjust automatically to every humidifying requirement.

Thermo-Drip Humidifiers moisten the air as it is heated... in direct proportion to temperature. Foolproof bi-metal thermostatic controls regulate the water feed and accurately control the amount of vaporization. Write today for complete catalogues, deliveries, and prices.

Dept. A-648

Automatic
HUMIDIFIER CO.
CEDAR FALLS, IOWA

*Here's your
Answer to the
fast-growing
demand for
electric water
heaters...*

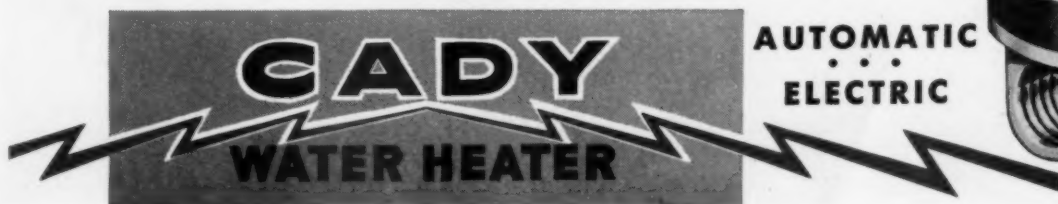
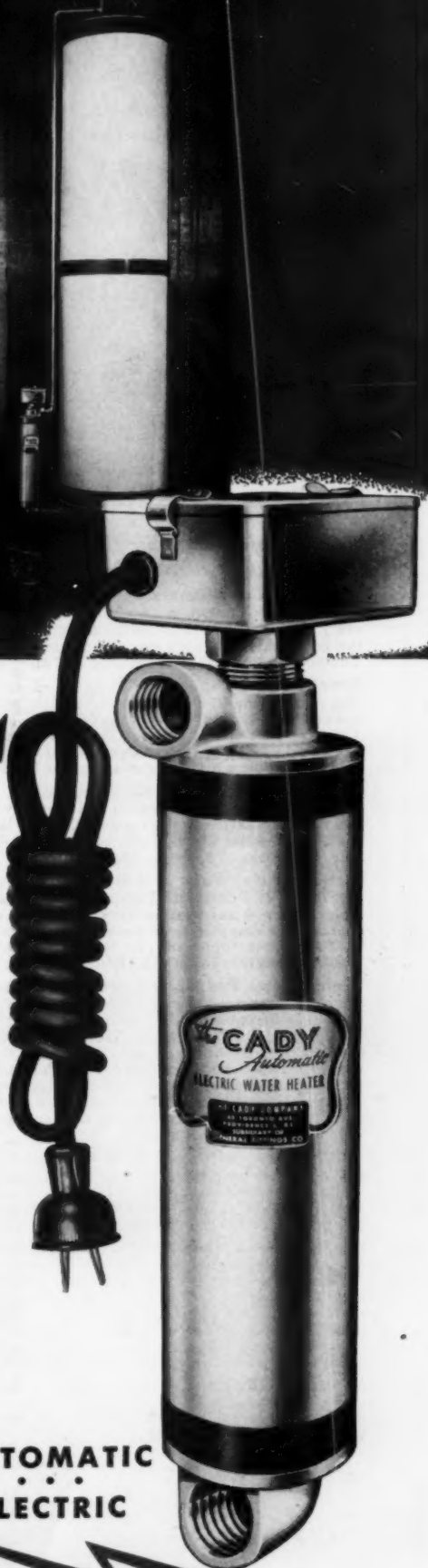


CADY Plug-in ELECTRIC WATER HEATER

With this low-cost electric, water heating unit, you can get added business from customers and prospects who are in the market for this type of product. You'll find it a cinch to install... plugs into any wall outlet... no electrical work or wiring needed... and there are only two 1/2" pipes to connect to the water tank.

The Cady Heater is designed for any 5 to 30 gallon storage tank. It is clean, odorless, continuous and trouble-free. No wicks to trim, no oil tank to refill, no coal to shovel or ashes to remove. 1000 watt or 1500 watt heating elements for either 115 or 230 volt A. C. approved by Underwriters' Laboratories. Copper and brass water-ways throughout. Fiberglas insulated jacket. Positive, built-in automatic control with temperature adjustable 80° to 180°. 1000 watt element recovery rate 7 1/2 gals. per hour, 60° F. rise. 1500 watt element, 10 1/2 gallons per hour, 60° temperature rise. 6' plug-in cord. Size 4 1/2" x 16 1/2" overall.

Here's your chance to cash-in on a fast growing market. Get a heater sale as well as the job connecting storage tank pipes. Write for full particulars. THE CADY COMPANY, Dept. S, 123 Georgia Ave., Providence 5, R. I. (Subsidiary Of General Fittings Co.)



THE COMPLETE LINE



Janitrol

TIME-PROVEN
GAS HEATING

Products of more than thirty years pioneering the newest developments in gas heating.

Winter Air Conditioners: Complete line of seven sizes, ranging from 60,000 to 180,000 Btu/Hr. input ratings for every heating requirement. Extremely compact, Janitrol units can be installed in utility room, attached garage, or closet. The 90,000 Btu unit requires only 23" x 27" floor area.

Gravity Furnaces: Modern design and unique construction of both the 75,000 and 100,000 Btu units make them one of the easiest and fastest of any furnace to erect and install. They bring the benefits of clean, completely automatic central gas heating to small, low cost basement type homes, which today constitute a high percentage of the houses being built.

Therm-O-Attic: For basementless homes, the Janitrol Therm-O-Attic provides heat in winter—ventilation in summer. Definite saving in floor space, chimney length and duct work are possible through this blower unit, installed in the attic. Four sizes—75,000 to 225,000 Btu/Hr. ratings.

Boilers for Hot Water and Steam Systems: The Janitrol Gas Boiler is a complete, compact unit available either for steam or hot water heating systems. Pilots and automatic controls are completely enclosed for safety and simplicity.

Twenty-one sizes with certified A.G.A. rating of 170 to 2700 square feet of steam and 270 to 4320 square feet of water.

Triple Service Hot Water Systems: Provides three separate supplies of hot water... each at the right desired temperature... all from a single Janitrol unit. (1) Hot Water for Comfort Heating (2) High Temperature Water for the Laundry and Dishwasher (3) Tempered Hot Water for Lavatory, Tub and Shower. Here is a complete factory tested package including radiation, piping, fittings, and accessories. Three sizes meet home or apartment needs, units can be gas or oil-fired. Used with convectors, temperature of each room can be individually controlled.

Unit Heaters: Thousands of industrial and commercial installations are testimony to Janitrol's popularity, dependability and economical operation. Fifteen models ranging from 50,000 to 225,000 Btu/Hr. input ratings are available equipped with either propellor or blower type fans.

Heavy Duty Unit Heaters: Janitrol Heavy Duty Floor Mounted Unit Heaters are ideal for large space heating applications and tempering of ventilated air. Their extreme simplicity coupled with adaptability to all types and kinds of buildings utilize a minimum of floor space. Complete range of sizes and capacities is possible by use of sectional construction, up to 1,500,000 Btu capacity can be secured by assembling six multiple units in an integral installation.

Conversion Burners: Janitrol offers a complete line for every purpose—Upshot Models for round or rectangular boilers and furnaces—Inshot Models for wet or dry base rectangular fireboxes. Complete details sent on request.



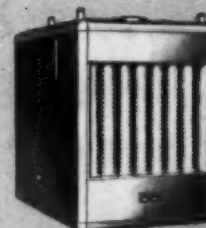
WINTER
AIR CONDITIONERS



GRAVITY FURNACES



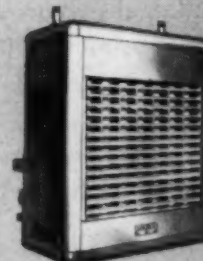
BOILERS



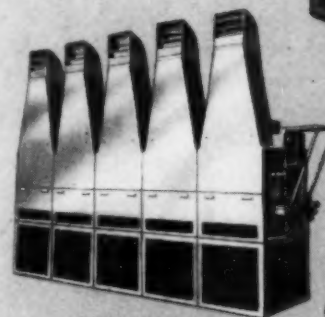
ATTIC HEATERS



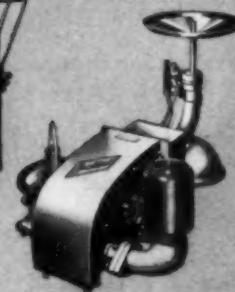
TRIPLE SERVICE
HOT WATER SYSTEMS



UNIT HEATERS



HEAVY DUTY
FLOOR UNITS



CONVERSION BURNERS

SURFACE COMBUSTION CORPORATION • TOLEDO 1, OHIO

History will be made
under a roof of
**ANACONDA
COPPER**



PARTY DELEGATES assembled in the huge Philadelphia Municipal Auditorium will select their candidates for the nation's highest office. Hon. Bernard A. Samuel, Mayor of Philadelphia, will welcome the delegates to the first of the national conventions which opens here on June 21st.

This spring more than 100,000 pounds of Anaconda Copper were used in reroofing the barrel vault type roof which covers this vast amphitheatre. The proven durability of copper, its fabricating qualities, corrosion resistance, appearance and low maintenance costs, combined to give this time-tested metal preference over all other materials considered.

Design and supervision of this tremendous roofing job were in the hands of Joseph A. Roletter, Director of City Architecture, and Thomas Buckley, Director of Public Works. The J. Edward Linck Sheet Metal Works of Philadelphia and Washington were the contractors.

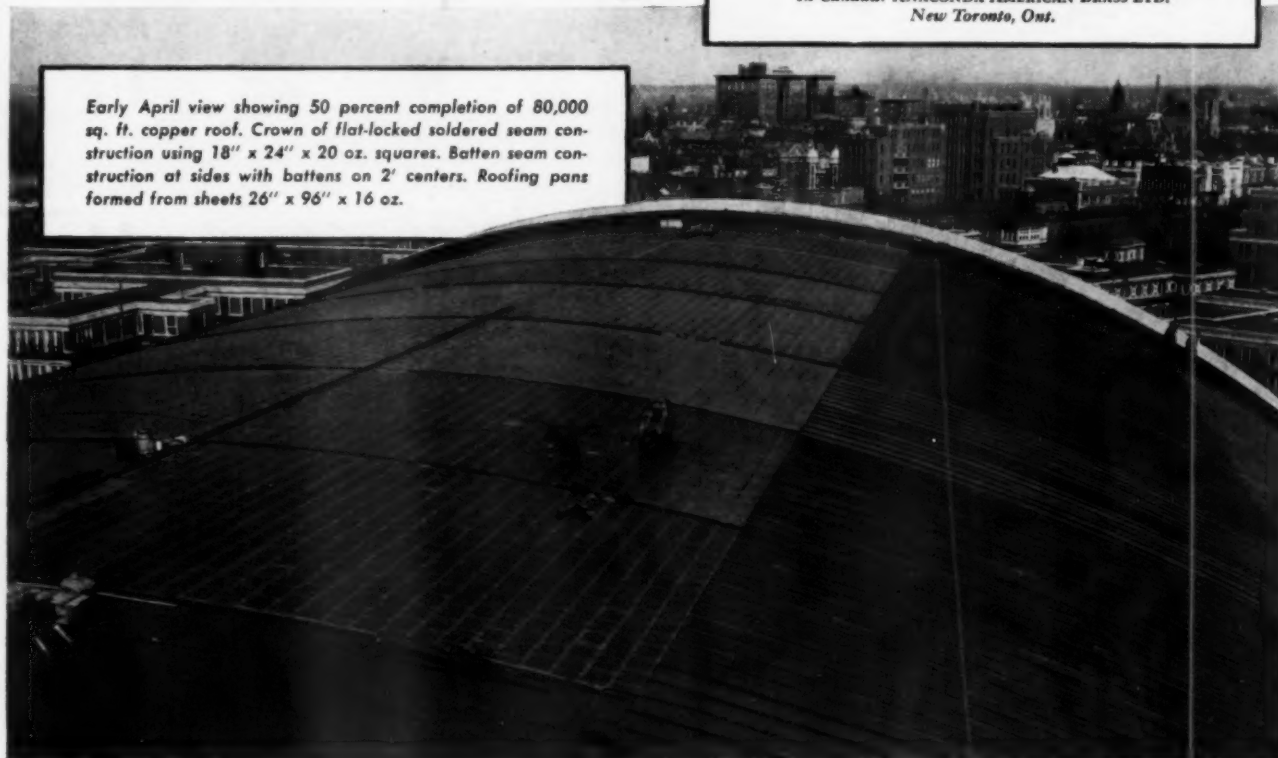
The Philadelphia Municipal Auditorium, erected in 1930, has a seating capacity of more than 13,000 in the main hall.

ANACONDA
from mine to consumer
Anaconda
COPPER

THE AMERICAN BRASS COMPANY

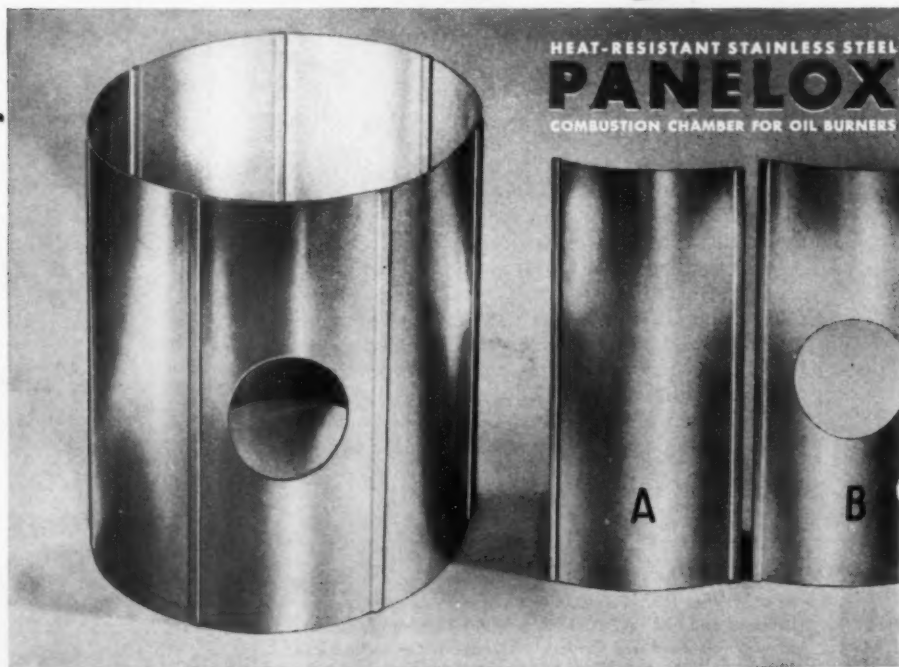
General Offices: Waterbury 88, Connecticut
Subsidiary of Anaconda Copper Mining Company
In Canada: ANACONDA AMERICAN BRASS LTD.
New Toronto, Ont.

Early April view showing 50 percent completion of 80,000 sq. ft. copper roof. Crown of flat-locked soldered seam construction using 18" x 24" x 20 oz. squares. Batten seam construction at sides with battens on 2' centers. Roofing pans formed from sheets 26" x 96" x 16 oz.





Cold Cash for You...



Light in weight (about 8 lbs. for average chamber of 7 panels). Easy to handle. No breakage in shipment, handling or installation.



Interlocking seams prevent warping—add rigidity and structural strength. Designed to allow for expansion and contraction.



No Backfill! No Cementing! No Tools! Panels slide together easily, quickly. Speeds up every job—cuts labor cost way down.



Light weight means low shipping cost, and minimum display or storage space. Carton containing any size PANELOX measures 3 x 7½ x 15".

with this Red Hot Profit Maker

How many oil burner owners are in your own community? How many shivered through the winter on reduced fuel supplies?

Mister—that's your immediate market for PANELOX Combustion Chambers! And chances are it's big enough to keep you plenty busy selling and installing this red-hot profit maker.

And why not! The PANELOX gives oil burner owners everything they want—and want right now. Saves fuel. Saves money. Cuts down noise. Reduces smoke, soot and oily film due to improper combustion. Provides more uniform heat—without override. Heats up in seconds. Made of finest heat-resisting stainless steel to stand up for years.

Assembled in just a few minutes

Yes—that's all it takes to assemble a PANELOX. You simply slide the interlocking panels together right inside the fire box. No tools required. No cementing. No backfill. It's as easy as that.

Decide now—today—to get in on this easy way to make cold cash with PANELOX.

Write, wire or phone for full details and prices

STEFECO

STEEL COMPANY

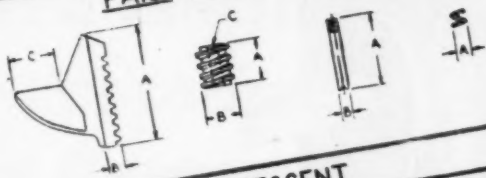
HEATING EQUIPMENT DIVISION • MICHIGAN CITY, INDIANA

Installed in MINUTES
Heats up in SECONDS
Stands up for YEARS

SEND THIS CARD TO STEFCO for more information

AMERICAN

THIS CHART SIMPLIFIES IDENTIFICATION of CRESCENT and CRESTOLOY WRENCH PARTS

PART IDENTIFICATION											
											
CRESCENT											
SIZE IN INCHES	JAW			KNURL			PIN		SPRING		
	A	B	C	A	B	C	A	B	A	B	C
	$\pm \frac{1}{16}$	DIA. $\pm .010$	$\pm .010$	$\pm .010$	DIA. $\pm .010$	DIA. $\pm .005$	$\pm \frac{1}{16}$	DIA. $\pm .005$	DIA. $\pm .010$	DIA. $\pm .010$	DIA. $\pm .010$
4	$\frac{29}{32}$	$\frac{7}{32}$	$\frac{13}{32}$	$\frac{5}{16}$	$\frac{21}{64}$	$\frac{1}{8}$	$\frac{19}{32}$	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{9}{32}$
6	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{33}{64}$	$\frac{7}{16}$	$\frac{9}{16}$	$\frac{3}{16}$	$\frac{13}{16}$	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{21}{64}$	$\frac{13}{32}$
8	$\frac{5}{8}$	$\frac{5}{16}$	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{1}{4}$	$\frac{11}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{13}{32}$	$\frac{13}{32}$
10	2	$\frac{3}{8}$	$\frac{27}{32}$	$\frac{25}{32}$	$\frac{3}{4}$	$\frac{5}{16}$	$\frac{27}{64}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{13}{32}$	$\frac{13}{32}$
12	$2\frac{7}{16}$	$\frac{7}{16}$	$\frac{15}{16}$	$\frac{1}{4}$	$\frac{1}{4}$	1	$\frac{5}{16}$	$\frac{13}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{1}{2}$
15	$3\frac{3}{16}$	$\frac{9}{16}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{5}{8}$	$\frac{3}{8}$	$2\frac{1}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{2}$
18	$3\frac{27}{32}$	$\frac{3}{4}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{3}{8}$	$2\frac{1}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{2}$
CRESTOLOY											
4	$\frac{29}{32}$	$\frac{3}{16}$	$\frac{3}{8}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{1}{8}$	$\frac{19}{32}$	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{9}{32}$
6	$\frac{9}{32}$	$\frac{7}{32}$	$\frac{33}{64}$	$\frac{7}{16}$	$\frac{9}{16}$	$\frac{3}{16}$	$\frac{13}{16}$	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{21}{64}$	$\frac{13}{32}$
8	$\frac{5}{8}$	$\frac{5}{16}$	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{1}{4}$	$\frac{11}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{13}{32}$	$\frac{13}{32}$
10	$\frac{31}{32}$	$\frac{11}{32}$	$\frac{23}{32}$	$\frac{25}{32}$	$\frac{3}{4}$	$\frac{5}{16}$	$\frac{27}{64}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{13}{32}$	$\frac{13}{32}$
12	$2\frac{25}{64}$	$\frac{13}{32}$	$\frac{15}{16}$	$\frac{1}{4}$	$\frac{1}{4}$	1	$\frac{5}{16}$	$\frac{13}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{1}{2}$
15	$3\frac{1}{16}$	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{5}{8}$	$\frac{3}{8}$	$2\frac{1}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{2}$
18	$3\frac{13}{16}$	$\frac{5}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{3}{8}$	$2\frac{1}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{2}$
24	$4\frac{2}{16}$	$\frac{3}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{3}{8}$	$2\frac{1}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{2}$

Refer to this chart when ordering Crescent or Crestoloy parts.

SEND FOR ADDITIONAL FREE COPIES OF THIS CHART. You may have as many copies of this PARTS IDENTIFICATION CHART as you may require. Just drop us a line today. Please refer to

this chart when ordering CRESCENT or CRESTOLOY PARTS. Avoid the delay which is sometimes caused by insufficient information on orders. CRESCENT TOOL COMPANY, Jamestown, N. Y.

CRESCENT TOOLS

Give Wings to Work



* "CRESCENT" is our trade-mark registered in the United States and foreign countries for wrenches and other tools. "Crescent" tools are made only by Crescent Tool Company of Jamestown, N. Y., and are sold by leading distributors everywhere.



PACKARD SUNLIGHT MOTORS

*Good from End Plate
to End Plate*

PACKARD
SUNLIGHT MOTORS
for
compressors
washing machines
power-driven
bench tools
ironers
milk separators
milking machines
furnace blowers
stokers
oil burners
water pumps
ventilators
and many other
applications



Every detail of Packard Sunlight Motors is engineered and built to give lasting satisfaction. Shafts are machined with care. Journals are designed for long life. Windings are uniform in quality, carefully insulated. Packard Sunlight motors are built throughout to help safeguard performance . . . and increased plant facilities promise fast delivery on new orders.

Packard
TRADE MARK

Packard Electric Division, General Motors Corporation, Warren, Ohio

W
be
"F
ne

E
more
ing c
coal
give
want

TH
tion"
satisf

Plent
plent
in y

IO

**Will extra clothing
be your customers'
"Heating System"
next winter?**



**With the "Unbeatable Heating Combination"
no one is a Heat Orphan**

EXPERTS predict the shortages of some fuels will last from 3 to 5 more years! *But*, the "unbeatable heating combination" of an automatic hard coal stoker *plus* plentiful anthracite will give your customers all the heat they want when they want it!

The "unbeatable heating combination" keeps your customers warm and satisfied these three ways:

Plenty of Heat—A full year's supply of plentiful anthracite can be stored easily in your customers' homes. Occupants

need not turn their thermostats to chilly levels to conserve fuel.

Economical Heat—Stokers use the smaller, cheaper stoker sizes of hard coal... reduce fuel bills as much as 52%.

Completely Automatic Heat—Modern hard coal stokers are fully automatic... from bin feed to ash removal. Sensitive thermostatic controls keep heat steady regardless of outside temperatures.

Get all the facts on heating with *all* types of anthracite heating equipment. Simply mail the coupon, today.

**Manufacturers of
Approved Automatic
Stokers**

ALLEN STOKER
ANCHOR STOKER
CATSKILL STOKER
COOPER STOKER
ELECTRIC FURNACE-MAN
FAIRBANKS-MORSE STOKER
FUEL SAVERS STOKER
IRON FIREMAN
MOTORSTOKOR
NEWTON STOKER
STEWART-ROGERS STOKER
VAN WERT STOKER



ANTHRACITE INSTITUTE

101 Park Avenue

New York 17, New York

ANTHRACITE INSTITUTE
Dept. 6-R, 101 Park Avenue.
New York 17, N. Y.

Please send me more information on anthracite and anthracite heating including stokers and the new anthratube.

Name _____

Company _____

Address _____

City _____ Zone _____ State _____

PLEASE PRINT



Time for a Breather

Perhaps you have forgotten such things, Mr. P. A., but isn't it time you gave some special attention to your rod and reel, your garden and your golf game. Yes, the vacation season is well under way, and if you're going to wander in the wide open spaces—better begin thinking about it.

We know you are having a tough time. Steel buying, like steel supplying, is no easy task these days. But a little rest now will pay off in new energy and a new outlook on your return.

While you're away, please know that we'll be doing everything we can to give your company prompt service on steel. With demand so heavy there may be times when we cannot meet all requirements. But you can be sure your associates will receive all possible cooperation from the nearby Ryerson plant, as you would yourself.

So break away soon for that grand and glorious vacation. You owe it to yourself, your family and your company. Joseph T. Ryerson & Son, Inc.

RYERSON STEEL

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AMERIC
MANAGE

AMERICAN ARTISAN

RESIDENTIAL
AIR CONDITIONING

WARM AIR HEATING

SHEET METAL CONTRACTING

Labor Management Relations Act

SEVERAL provisions of the Labor Management Relations Act invoked by the courts, against unions and their officials, indicate the new law will be a source of new experiences in our national labor policy. These court decisions mark the differences between the new and previous laws. Certain rights have been legislated into the new law which empower the General Counsel to act in behalf of the general public or on charges filed by an employee, employer, or union.

The old Wagner Act was a pronouncement of a national policy that recognized the right of employees to bargain collectively in negotiating for betterment of the conditions of employment. It was a guarantee that employees could join others and choose representatives to act in their behalf and bargain for terms and conditions of employment, without threat of retaliation or discrimination for their unified action. It was an advancement in labor relations which elevated the employee's status to a plane where his labors could not be dealt with individually as a commodity under the direct control of his employer.

However, it was not without fault. Employee rights were exploited and abused under the protection of collective bargaining. To correct these faults, the new law recognizes the rights of all who are concerned with a labor dispute. These corrective measures were motivated by public demand for equity in our national labor policy.

Employer rights have contributed much to the opposition that has arisen in some quarters against LMRA. In this respect the new law departs from the old law by permitting employers to file charges against unions for the following unfair labor practices:

To coerce or restrain either employees in the exercise of their rights (to engage or refrain from engaging in union activities) or employers in the selection of representatives for collective bargaining or adjustment of grievances;

To coerce or attempt to coerce an employer to discriminate against an employee for any reason other than (under union shop agreements) failure to pay dues or membership fees;

To refuse to bargain with an employer; provided it is the representative of his employees;

To engage in, or to induce or encourage the employees of any employer to engage in a strike or concerted

refusal (boycott) to: (1) force an employer or any other person to cease dealing in the products of, or doing business with, any employer, (2) force an employer other than the immediate employer to recognize or bargain with a union unless that union has been certified by the Board as representative of his employees, (3) force an employer to bargain with it if another union has already been certified by the Board as representative of the employees of that employer, and (4) further a jurisdictional dispute;

To require excessive or discriminatory fees or dues under union shop agreements;

To cause or attempt to cause an employer to pay or deliver or agree to pay or deliver any money or other value for services which are not performed or not to be performed.

The Act prescribes no penalties for unfair labor practices. When a charge of an unfair labor practice is filed with the Board, the General Counsel has authority, on behalf of the Board, to investigate the charge and decide whether or not a complaint shall be issued. Hearings must be held whether or not the person filed against appears in answer to the charges, before the Board may issue an order requiring him to cease and desist from continuing the unfair labor practice specified.

The Board has the power to petition any circuit court of appeals in any district where the unfair labor practice took place for appropriate temporary relief or restraining order. If the order is issued and the offense continues, the court may hold the offender in contempt of court, subject to imprisonment and fines.

The act makes it mandatory upon the Board to give priority to investigations of charges of illegal strikes and boycotts. If it appears that the charge is substantiated and that a complaint should be issued, the Board must petition the district court for appropriate injunction relief. If issued, the injunction will continue in effect until the Board has reached a decision on the unfair labor practice charged.

In cases of jurisdictional disputes, the Board must hear and determine the dispute unless, within 10 days after filing of the charges, the parties can show it has been settled. If deemed appropriate, the Board may petition for injunctive relief before a complaint is issued. However, in this case, injunctive relief is discretionary.



Arnold Kruckman's

IT SEEMS likely the Taft-Ellender-Wagner Housing bill will be smothered in the House Banking and Currency Committee, and may not see the light of debate on the floor of the Congress before the end of this session. A large part of this expected eventuation is said to be due to the reluctance of chairman Jesse P. Wolcott, of New Jersey, the Republican Congressman, who is not at all partial to the legislation. Mr. Wolcott has been in a very unhappy spot. He does not like the 115 page document at all, and he has been under heavy pressure from the building industry, the building equipment industry, the building materials industry, and the financial interests who are overwhelmingly opposed to TEW, while on the other side he has been urged by the CIO, and the various elements who might be designated as the liberals, radicals and New Dealers, to get the bill out on the floor. It is related that when the hearings appear to be bending towards the probability that the bill will be put into limbo, the Roosevelts—Franklin D., jr., and his mother, Mrs. Eleanor Roosevelt—either come down to the capital and demand to know why the hearings are going so slowly or they send their emissaries to accomplish the effect of speeding consideration towards their interests which are wholly in favor of the bill. The most constant pressure in favor of the legislation comes from the CIO. It is felt here that if, by chance, these pro-elements manage to set enough fires going to spur the committee to report the bill to Congress, there is a very good chance that it will be enacted. The survey shows that the vote there will be so close that it is not possible to determine exactly what may happen. It has already passed the Senate. If by any chance it gets by the House it would almost surely go to conference between the House and Senate to smooth out the slight differences that may occur, and it would almost surely become law. Obviously this is one of those explosive pieces of legislation which make the members of Congress pray that something will delay it until the next Congress gathers after the November elections. No matter how it goes it is expected to be bound to cost some Congressmen their chances of election in November.

The Belladonna Boys

When a Congressman or Senator becomes enthusiastic about the TEW bill the usual approaches of objective reasoning seem to be closed. It is, strangely, a political emotional issue. They call the usually cool and rational men such as Senator Taft, who are utterly

overboard about the bill, the Belladonna Boys. This bit of irreverence stems from the fact that it is said to be almost invariably true that their eyes glow when they begin to argue in its favor. On the other hand, those who follow the Ellender school are called the Bleeding Hearts, the people who agonize over the presumed sufferings of those who have no housing and who are said to be unable to get any appropriate new housing. And, of course, finally, there are the simon pure altruists, who stem from the group in the population which feels that we must socialize housing, building, and everything else that might become the proper service or facility to be placed under the direct control and ownership of government. This is the group which naturally follows Senator Wagner of New York. The Senator is now not well, and spends little time in Washington.

The Prime Purpose

There is little doubt the prime purpose of the bill from a political standpoint is to accomplish the socialization of basic industries and services. If the bill is enacted the taxpayers will be compelled to supply somewhere between \$9 billion and \$10 billion to do what its sponsors have in mind. Over \$6,400,000,000 of this sum will be spent to help pay rent for the carefully chosen families who will live in the new housing. It is a curious, but not novel fact, that there is so much authority to spend taxpayer's money in this proposed legislation—which runs over 25,000 words—that no one can exactly determine just what the total potential expenditure may be if it is made into law. There are many and vague provisions which carry implications of free spending as well as many contingent liabilities which involve spending. The organized opposition has discovered that the known commitments at a minimum would cost every man, woman and child in the United States \$62. The figure obviously is much more startling when it is translated into terms of families or heads of families, or when it is loaded upon those who have the income to pay the tax.

No one seems to know just how many new homes will be built under the terms of the bill although a minimum of 500,000 socialized public housing units are provided, to be built within five years after the bill becomes law. Senator Taft himself has estimated the need for public housing may run as high as 3 million, while Senator Barkley thinks in terms of 6 million, and another senator said the Senate Banking and Currency Committee has been told there will be a need for 10 million. The CIO, the union which would prob-

Washington Letter



ably benefit by a stimulus in promoting new memberships, has urged Congress to consider the probability that 12 to 18 million new housing units will have to be built by the government. Many government experts in the various housing agencies are convinced the problem of supplying proper housing will never be solved until two-thirds of the 145,000,000 people in the United States live in Government-built, and rent-subsidized socialized public housing. This would seem to mean that approximately 100,000,000 people of the United States would live in houses built by the government to which they would pay rent.

Effect Upon Construction Industry

The aspect which, of course, gives most concern to builders, and to those who make and supply the materials and equipment which go into the public housing, is its effect upon the whole construction industry and its allied and indirect supporting parts. Socialization of housing in England has virtually put the industry out of business as a private and independent activity. Not long ago when the needs of the public housing builders collided with the needs of those engaged in private enterprise in England, the British Socialist Government made a law which restricts private enterprise at the ratio of 4 to 1. The private industry was practically wiped out by the mandate which compels that supplies must go to the public jobs at the rate of 4 to each consignment of materials and equipment that go to those who build privately. It has been discovered there that the whole activity of building has slowed down amazingly under the public program. This correspondent has cousins in England who live in the Midlands. They own a rather large and typical home. Some repairs were needed, as well as repainting and papering of some interiors. To secure what was necessary, both in materials and labor, they had to file an application in London. Some eight months after the application was filed they received the essential permit. The permit restricted them to the sources of supply they might patronize, the type of labor they might hire, and where they might find their labor. The material and the supplies were inadequate and faulty; the labor was largely untrained or poorly trained and was indifferent to the task. Some of the interior facilities were damaged by the inadequacy of those who were supplied to do the job. The result was utterly disheartening, and very costly. This British public housing program began 29 years ago from a perfectly legitimate and laudable desire to improve the homes

of low-income families. Out of this mild program grew the present all-embracing control of British housing. Today no private house can be built without express governmental approval. The British Government practically does all housing construction. The government is the monopoly which builds. And, with all this, naturally the bureaucracy in charge has expanded amazingly. The sequence indicated here amazingly parallels what happened in Britain. First, homes for the underprivileged; then homes for those who are not underprivileged; and finally all construction for everybody by government.

The recent basing-point decision by the Supreme Court of the United States has more profoundly revolutionary implications than is understood by the average business man. It is so far-reaching that even the lawyers are studying it intently, and are saying little. There are probably more legal minds bent upon this decision than there have been upon any rulings from the Supreme Court for many years. It is of very special interest to the metal fabricating and manufacturing industries, and to the smaller industries in all parts of the United States. It is expected to be the salvation of the smaller steel and iron manufacturing and fabricating plants in Nebraska, Kansas, and Western Missouri—those plants which were threatened by the new alignment of delivery practices of steel mills. The decision is expected to give great stimulation to local and regional production, and to reduce the volume of national production. As a matter of fact it is expected the ruling will possibly wipe out the uniform pricing system, and restore something we have not had in this country for decades: a price based upon f.o.b. mill quotations plus freight, in all instances without exception.

Basing Point Pricing Decision

The effect of the recent decision, directly, is of chief importance because it hits the great steel mills as well as the cement companies and other steel and metal producing plants which sell at identical or similar prices and absorb freight on the regional basis. As is well understood, these basing-point prices rest upon an over-all price from a certain regional point of origin. The recent Supreme Court decision declares that the practice as found in the cement industry constitutes an unfair method of competition as well as unlawful discrimination. The Court found that it was a violation of the Robinson-Patman Act as well as of

(Please turn to page 154)

Select Your Market . . .

Then SELL IT!

KEN CLAYTON
The Chicago Tribune

WIDESPREAD adoption of a revised co-operative advertising technique in the heating equipment field during 1948 is suggested by expanded use of a new formula on the part of firms which tested it last year. The technique, devised by the Chicago Tribune and titled the Selective Area advertising plan, already has been extensively utilized by such firms as the Century Engineering Co., Coleman Co., Norge division of Borg-Warner Corp., and A. O. Smith Corp. Combustioneer and Williams Oil-O-Matic Corp. executives have been studying the new co-operative advertising formula which appears to be suitable for use by virtually any manufacturer who distributes products through a selective dealer organization.

Dealer Benefits

This co-operative advertising procedure enables a heating equipment dealer to purchase exclusive use of that portion of a metropolitan newspaper's circulation within his trading radius at the same milline rates available to advertisers using total circulation. While other dealers are identified with the same advertisement, no competing dealer within his own trade area participates in the same ad. Many newspapers throughout the country are now utilizing the Selective Area principle to give dealers exclusive neighborhood coverage.

The Tribune publishes Selective Area advertising in its five Sunday metropolitan sections which cover five separate Chicagoland areas, but comparable split runs are not essential to Selective Area operations elsewhere. In most markets the entire newspaper circulation can be considered as a unit comparable to any one of the Tribune's metropolitan sections. Each metropolitan section covers an area of approximately a million residents with a circulation of some 200,000.

In using the Selective Area system, a manufacturer, in co-operation with advertising agency and newspaper representatives, divides newspaper coverage of each market which is to be included in his campaign into zones which supply circulation packages suitable to his dealer organization. In a market of 100,000 to 250,000 persons circulation packages of 7,000 each have proven feasible. A market of 250,000 to 500,000 residents can be divided into packages of 10,000 circulation each; a market of 500,000 population and more can be divided into packages of 20,000 circulation each.

A newspaper circulation of 100,000 might be divided into five trading zones, in each one of which the newspaper provides a circulation of 20,000. For purposes of illustration, suppose that a manufacturer distributed his product through 20 dealers in such an area. Each of his Selective Area co-operative advertisements could carry the names and addresses of five of those dealers without any one dealer infringing upon the trading zone of another. In a series of four advertisements, all 20 dealers theoretically might take part in the campaign, each with exclusive use of the circulation within his own zone when his name is published with the ad copy.

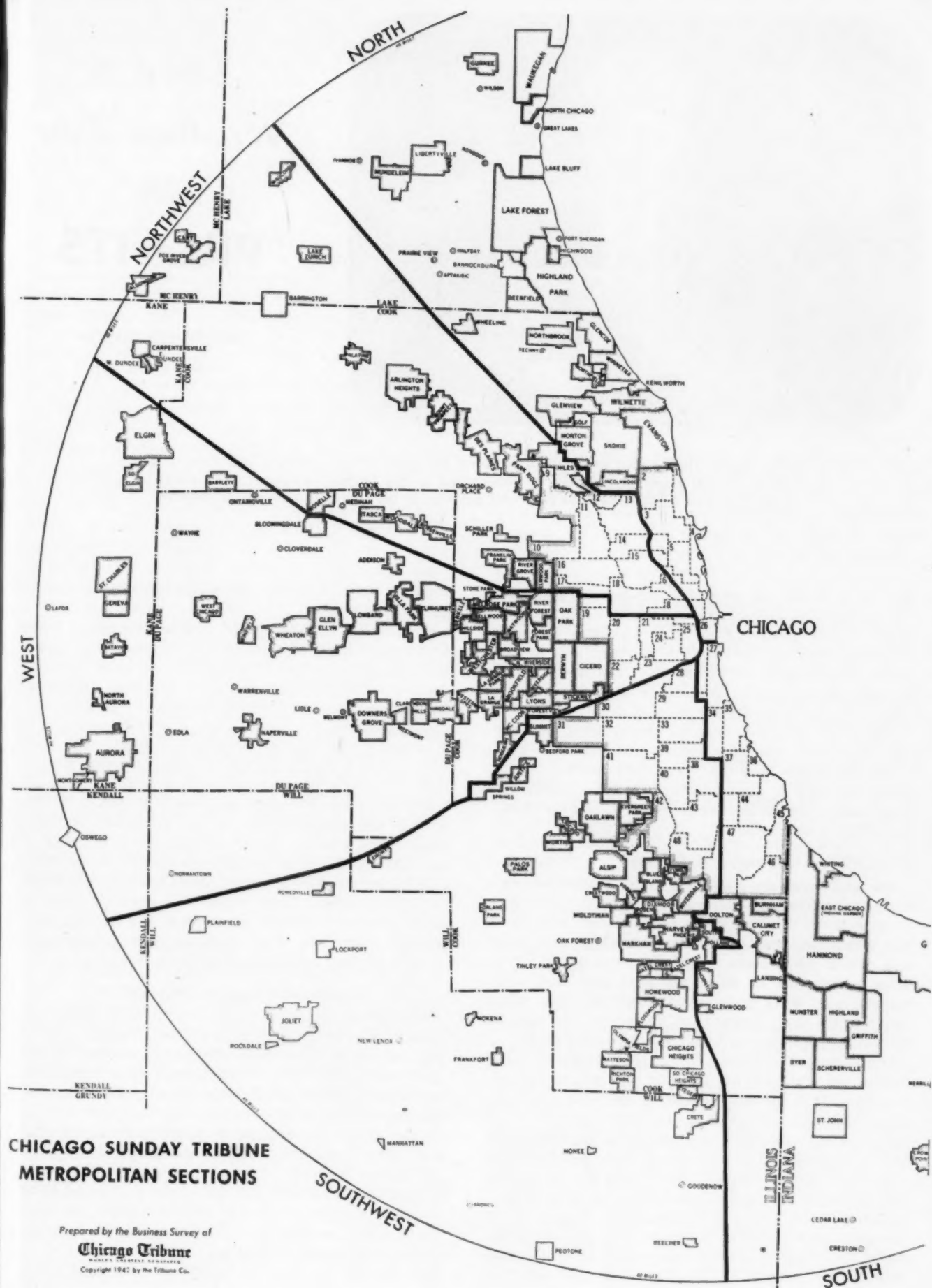
In actual practice, the Selective Area technique distributes dealer participation on an even more equitable basis. Each dealer is permitted to participate in a series of co-operative advertisements in direct proportion to his share of co-operative advertising allowances which have been built up through his own sales. Dealers who lead in sales may participate in many of the ads in an extended schedule; the names of others, whose sales have lagged, may appear in only a few.

All Selective Area advertising schedules are placed and controlled by the manufacturer through the distributor. The manufacturer thus maintains control, the distributor gets consistent promotion which he can merchandise to dealers, and the dealer gets his name and address signed to hard-hitting local copy which would cost him up to 25 times as much if he had purchased it himself.

Cost to Dealer

Division of the costs of such co-operative advertising varies with different firms. Often the manufacturer pays 25 per cent of the cost, the distributor 25 per cent, and the participating dealers the remaining 50 per cent. In the Coleman schedule in the Chicago Tribune, for example, 15 non-competing dealers participated in each of the ads published in each metropolitan section. Each dealer thus utilized approximately 13,000 exclusive circulation. The cost, on the basis of 15 dealers per metropolitan section per Sunday, follows: full page cost per section at that time, \$664.80; factory-distributor share, \$322.40; cost per full page per dealer, \$21.49.

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Keep a Weather Eye on PROFITS

BETTY LEE GOUGH
New Orleans, La.

The author thinks that attempting to run a business without a clear and constant check on the profit being made is like sailing a ship without a rudder. We agree with her. You must know your financial position at all times, to operate efficiently.

WHY is it that one contractor can make a large net profit on an average yearly volume, while another, doing a heavy volume often winds up with a low net? Sometimes the answer to this question lies in the ability to use business records—specifically the profit and loss statement—as a guide in planning policies, purchase, sales campaigns and prices.

Unless you know your costs pretty well, you are operating blind. You may find yourself making a good net profit. Again, you may even find yourself in the red at the end of your year's operations, unless you know exactly where you are going, what you are doing, and *why* you are doing it.

Planning Is Essential

The profit and loss statement serves contractors who have sound business training as a constant blueprint of operations. From a study of the latest profit and loss statement, they know what mistakes were made and how to avoid those mistakes in the future. They know which sort of work was profitable, and what made it pay. They know which jobs didn't put much into the till and, again, they know why; so that in future, similar jobs can be figured more efficiently.

Ordinary bookkeeping gives a good grasp of these factors too. But without a profit and loss statement, you often lack information about overhead expenses, inventories, and the factors that made your year (or your quarter) profitable or unprofitable. The profit and loss statement condenses your essential records into one easy-to-read page. It tells where the expense and overhead money went, and often gives an idea of how expenses can be cut in the future. It is a quick, one-page record of all the business done in a period, and it is supremely necessary as a guide to sound management and operation. Planning without the aid of an

accurate profit and loss statement amounts to planning in the dark.

How hard is it to figure out such a statement? Does a contractor need special bookkeeping training to do it? Must he call in a bookkeeper or auditor to go over his year's records and extract a profit and loss statement from them as a dentist would extract a tooth? Actually, the preparation of a year-end, a semi-annual, or a quarterly profit and loss statement is simple. Whether you "pull a P and L statement" once a year, twice a year, or every three months, is up to you. There is no hard and fast rule of good business to govern it. There is only this consideration: if the statement is compiled every quarter, fresh information is constantly available, while a once-a-year statement may grow cold before another is made. Many heating and sheet metal contractors have found it a good practice to make quarterly statements covering the three-month periods, then add these together into a year's-end profit and loss compilation for income tax purposes.

Adequate Records Required

Most of the information on a profit and loss statement comes from daily record sheets, which can be kept simply in a one book system. In addition to the information regarding credit transactions, purchases, wages, office expenses, advertising and sales promotion, transportation, cash receipts, etc. that the regular "books" give, it is necessary to figure in the inventories and a few other items, such as bad debts, that are not shown, as such, on the regular books. Inventory information is necessary because if you purchased \$5000 worth of heating equipment for installation, the purchase is not necessarily a \$5000 expense on the profit and loss statement. Let us say that from the five thousand dollars' worth of equipment in your warehouse,

three thousand dollars' worth has installed during the period, billed and paid for. It is no longer in inventory because it has been sold. But you have remaining some \$2000 worth of heating equipment. This should not be shown as an expense since you still have it. It is an asset.

Depreciation, too, is not always shown on the regular books. Yet it is an expense of business. Machinery and fixtures used in the shop, should be depreciated every year, basing depreciation on the probable life of the machinery and its trade-in value when turned in for a new machine. If profit and loss statements are "pulled" every three months, one fourth of the annual depreciation should be charged on each quarter's statement. The regular records tell when charge and credit sales have been written off as uncollectable. When this happens, the sums should be entered on the profit and loss statement as bad debts.

What Is Profit—What Loss?

The essential elements of a profit and loss statement are these: Receipts. Cost of merchandise sold. Subtracting the second from the first gives gross margin, or gross profit. From this subtract operating expenses to arrive at a figure representing the net profit or net loss for the period. Operating expenses include overhead, wages, delivery, transportation, advertising, salesman's commissions, entertainment, rent, office supplies such as paper, stationery, pencils and typewriter ribbons, taxes, licenses, business insurance, bank charges and interest on any business loans made, legal fees connected with the business, and miscellaneous items of expense. If your business contributed to a charity, that, too, is a business expense. If you joined an industry association, the local chamber of commerce, or any other body in which membership can be an asset to you as a heating and sheet metal contractor, that is a legitimate business expense, as well, and should be shown as such on the profit and loss statement. Postage, and freight and express payments are an expense of the business. Utility payments for electricity, power, gas, water and telephone service come under operating expenditures. Repairs to your equipment should likewise be charged off to overhead.

Audio-Visual Materials

RECOGNIZING THE RECENT TREND toward the use of audio-visual materials (films, slides, pamphlets, etc.) in presenting sales stories on the part of large companies and trade associations Wayne University of Detroit has set up an Audio-Visual Materials Consultation Bureau. The purpose of this bureau is to act in a consulting capacity for individuals, concerns and associations that are interested in producing visual instructional materials of any kind.

Market analysis, distribution surveys and help in the development of industrial training aids are some of the important types of services that this new bureau makes available. World War II resulted in great strides in the use of audio-visual materials as a tool in training workers in industrial methods and techniques and since there is still a shortage of manpower in some

It is necessary to count inventory records before proceeding with your profit and loss statement because this affects the second figure of the statement; your cost of goods sold, which is subtracted from the volume sales figure to determine the gross profit for the period. Let us again assume, for an example of how this works, that your actual physical inventory is some \$2000, while the price of your outgoing material during the period came to \$3000. Then your cost of goods sold is the \$5000 which was the value of your starting inventory, less the \$2000 which you have on hand, or \$3000. How can this statement of profit and loss be used most effectively as a management tool in the operation of your contracting business? By a study of its various items, you can determine how much was spent for each of the many business expenses incurred during the period. The best way to make sure that your operating costs are in line with what they should be is to compare each cost figure as a percentage of the volume sales.

In other words, if your sales volume was \$25,000 and during the period you spent \$1250 for advertising, your advertising appropriation was 5% of your sales. The best percentage for a contractor to spend, in the opinion of many experts, is around 3%. Thus it can be seen that too much money was spent for advertising. Instead of \$1250, the ad appropriation should have been in the neighborhood of \$750 to be in line with the practice of most successful contractors.

Watch the Percentages

By expressing each expense item in terms of a percentage of the volume, you can get a good line on how your business expenses compare with the prevailing ones in the field. If they are too high, you can take steps to lower them. If you are running under the budget, you can congratulate yourself on holding down the expenditures.

How can you secure standard ratios against which to compare your expense figures? Local trade associations often can supply you with good percentage figures. Chambers of commerce are fruitful sources of business statistics. The colleges of commerce of state universities are usually glad to help you secure operating cost data.

industries this means of increasing worker efficiency is still important.

AGA Annual Report

A COLORFUL and beautifully illustrated annual report has been issued by the American Gas Association. Its purpose is to give a comprehensive accounting of all the varied activities of the association in the past year and that objective is easily attained.

Most people are familiar with the AGA stamp of approval but not everyone knows of the many other types of research beside appliance testing that are sponsored by the association.

Also explained are the advertising and publicity activities of the AGA, which called for the expenditure of more than a million dollars in the last year. There were many publications issued that were helpful to members, also.

THE NEW TAX LAW

It's Effect on Your Business

WM. R. MURPHY
Lakewood, Ohio

Here is a discussion of the latest income tax legislation. The savings that are made possible by the community property provision are also listed.

SO FAR, only individual taxpayers have been affected by national tax legislation, but the set-up for corporations is under revision and should be settled soon.

Both employer and employee will enjoy considerable reduction in income tax under the new bill, not by reason of any change in the rates, but through amended provisions regarding personal exemptions, community property privileges for man and wife, and with respect to the overall deduction after the tentative tax is arrived at.

First, the personal exemption is raised from \$500 to \$600 per person, and this includes not only the taxpayer, but his wife and his dependents. Also, a taxpayer who is 65 years old, or older, receives an additional exemption of \$600, and if his wife is 65 she also gets the same exemption, or if she is not 65, she will get it when she arrives at that age. This is on top of the regular personal exemption, so that a taxpayer who is 65, and whose wife is 65 will get a total exemption of \$2400.

The blind, who have been receiving an exemption of \$500 in addition to a regular one, now will receive a regular exemption of \$600, plus an additional \$600, or \$1200 altogether.

These increases in personal exemption have the same effect as reduced rates, but eliminate the labor of setting up complicated schedules, such as the surtax schedule. The taxpayer understands an increase in his personal exemption much better than he would understand a change in the rates.

Standard Optional Deduction

Under the old law, which was in operation up to January 1, 1948, a taxpayer with an adjusted gross income of \$5000 or over could take his choice and either use his personal deductions or the \$500 optional standard deduction. But, no matter how much more than \$5000 his income was (\$6000, \$7,000, \$10,000 or even higher) he could use only \$500. Taxpayers in the lower bracket (below \$5000) could always use the government table on page 4 of Form 1040, which allowed them approximately a 10 per cent deduction.

The new law provides that the taxpayer in this bracket may now take 10 per cent of his income as a personal deduction, up to \$1,000. That is, up to \$10,000 the income is subject to a straight 10 per cent optional

deduction. This is for taxpayers who have fairly large incomes, but few deductions. Business people, as a rule, take most of their deductions through the business, and have comparatively few personal deductions.

One of my clients whose net income runs between \$8,000 and \$10,000, mostly from his business, cannot scare up even \$500 of personal deductions. This provision will save him and others in that group considerable money.

Furthermore, where a husband and wife file a joint return, and divide the income under the community property privilege (explained further on) each may take the \$500 standard deduction, or \$1,000 between them. To even things up, single persons also may take as high as \$1,000 standard deduction, if their income warrants it.

Community Property Privilege

Some thirteen states have enjoyed this privilege for many years, and the residents of those states have thereby paid a reduced income tax. In some states it is specified in the constitution, as in Wyoming. In other states the statutes are on the books. The new tax law accords this privilege to all taxpayers in all states, without encroaching upon the rights of the states in any way. It applies to federal income taxes only, but it may presage some basic changes in the laws of some 35 states.

Under the community property privilege, all income earned by either husband or wife, or by both, becomes the property of both in equal shares. Thus a man may earn \$10,000 in a year, while his wife earns nothing, still she owns one-half of the \$10,000. This principle is now universal, so far as income tax is concerned. Let's see how it works:

Under the present rates, an income of \$10,000 will cost \$2185 in taxes. But split the income in two, each of \$5000, and each income will cost \$921.50 in taxes, or \$1843 for the two, as compared with \$2185, a saving of \$342, or 18½ per cent. This can be accomplished on the 1948 return by the husband and wife filing a joint return, combining their income, then dividing the income by two, after deductions are taken out, and dividing their combined exemptions by two. The tax is calculated

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MERCHANDISING— HERE'S HOW

Publicity — Means to an End

DAVID MARKSTEIN

New Orleans, La.

“**L**OOK at that,” wailed the sales manager. “Jones Heating Company’s name is in an article again. The free publicity those guys get! Why don’t the reporters ask us something sometimes? Why can’t we get our name in the papers?” Why not? Free publicity doesn’t just happen. It is the result of careful planning and football team-precision execution of a program as thorough as that used for any selling operation. Publicity isn’t by any manner of means a substitute for advertising. Rather, publicity and advertising are—to use the football simile again—like a speedy halfback and a sturdy blocking back. The halfback gets the results, in the form of touchdowns, but the unsung blocker contributes in large measure to his success. Advertising and publicity are best *teamed*, advertising making the sales, with publicity helping to pave the way by making friends for the heating company.

Plan a Program

Planning for a publicity program might break down into five phases: *what* publicity to get out, *where* to send it, *who* to cultivate, *when* to break a story, and *how* to insure publication.

Taking the first phase, just what is a publicity story? What is good publicity—or is any publicity good? A publicity story is not only any one which does a direct selling job for the company, but any story which indirectly tends to put it in a favorable light as well. For example, a newspaper story about one unusual worker and the way he performs his job helps indirectly to build good will through the reaction of readers who say to themselves, “That’s a good place to work—treats its employees well.”

To the old fashioned press agent, any publicity, good, bad or indifferent, was desirable as long as it included his client’s name. The modern public relations specialist thinks otherwise. Sometimes, in fact, his job is to prevent, in so far as it can be done, the publication of articles and stories which reflect unfavorably upon his company. The aim of a publicity program is not to put the company’s name before the public in *any* way. Rather, it is to present the company in a favorable light.

Let’s look at a few examples of *what* a good publicity story for the heating company might be. Usually, the company manager himself doesn’t know that there is story material around, but almost any good company has scores of potential articles in its history, its personnel, its policies, and its promotions. In one city, a heating company had a display put up, not with the idea of selling it, but to bring crowds into the shop who, he hoped, would see, be attracted by, and purchase other services. The crowds did come and they did buy, but they might have been bigger had the manager known how to merchandise the publicity value of his promotion. It was advertised twice, and a card in the window invited customers into the shop. That was all!

Here is what the manager might have done to push the publicity value of his promotion: First, he might have invited newspaper editors to a private press showing. This would have been held after hours, so that the reporters sent to see it would have full opportunity to concentrate their attention on the display and its story without being distracted by crowds milling in the shop.

Tell Your Story

The history of the company—and it was bound to contain some interesting sides—should have been given to the reporters. Not merely told to them, but typed or mimeographed and handed to each. Opportunities should have been extended to the newspaper photographers to take all the pictures they wanted, and a pretty sales clerk might have been detained overtime to give the pictures human interest value. That’s *merchandising* the publicity value of a promotion. Not all promotions, of course, have such excellent news story possibilities, but many that the manager does not play up could be merchandised like that with excellent results. Every employee of the shop did something before he came to work for you. What was it? Many of them were airmen who bombed Germany and Japan. Many did more prosaic things during the war, but some undoubtedly did downright unusual ones. Some may have

been merchant seamen who were torpedoed, or who saw strange and unusual things. Talking to the personnel often brings out an interesting anecdote, an unusual experience that an editor would welcome. In return for ferreting out a human interest yarn, he'll usually mention that Joe Jones works for Smith's Heating Company. Not a big blurb, but something that makes Mr. Consumer think just a little more highly of the shop because it is connected with a person whom he admires (or he wouldn't have read the article).

Have you any kind of employee benefit policy? Do you furnish insurance? Help to pay the hospitalization costs of employees? Stories of employee relations that show the boss and his workers getting along well are in demand today. Talk to the editor!

Media Will Cooperate

Newspapers (especially those in the community where the company is located); magazines; and radio programs offer excellent outlets for consumer publicity. It is usually wise to cultivate key men,—editors, announcers, and radio program directors. Contrary to prevailing opinion, most newspaper editors are eager to receive publicity, provided they are not expected to insert free advertisements in their news columns, and provided the publicity gives them something of real news or human interest value.

When something pops that might be newsworthy—pass it on to the editors. Get to know them personally, let them understand that you are eager to help them to secure facts, statistics, and human interest material they need, regardless of whether a story of value to you develops. It is axiomatic in the news-gathering business that there is nothing older than yesterday's news.

Home Building Trends

EXPANDING USE OF GLASS for indoor-outdoor living was adjudged the outstanding new development in postwar housing by two out of three of the nation's leading home builders who participated in a poll conducted at the 1948 National Association of Home Builders exposition.

The builders, answering a questionnaire covering current housing trends, stated that greater mechanization of the home was the second most important development and radiant panel heating was third. Use of new alloys and plastics rated fourth, in the opinion of several hundred of the 6,000 attending the meeting.

The majority agreed that the six-room house was leading the construction parade today, winning over the five-roomer by a slight margin. They fixed the cost of today's average house at between \$9,000 and \$10,000.

If a homeowner could have exactly what he wanted, regardless of cost and other considerations, he would build a place with three bedrooms; about seven to eight rooms in all, costing about \$12,000 to \$15,000, the questionnaire disclosed.

Commenting on results of the poll, Frank Sohn, architectural consultant of Libbey-Owens-Ford Glass Company, said that the survey reflected what was apparent to anyone who studied home construction

anywhere in the United States.

So if something of immediate news interest does develop—don't sit on it. Release it while it's hot. To get cooperation from publication bosses, it is necessary to give cooperation. Ferret out the news for them.

Make It Complete

For example, getting back to the worker whose job, personality or past history may be unusual, it is wise publicity to "package" a story for the local media. Follow up the information. Interview the man. Get pictures, and present the whole, in a unit, to the editor if you can. If no trained publicity man is on the payroll to take care of this chore, call the editor of a local newspaper and give him an outline of the story, letting him know that if he cares to send a reporter to follow up your tip, you will extend all the aid you can. There are hundreds of unwritten human interest stories floating around all the time that editors can't cover because they don't know about them. Tips and active help in following up such feature material are appreciated.

To discover the hidden human interest material among his employees, one manager gave each a long, mimeographed form to fill out. This inquired into the employee's education, former employment, Army or Navy service if any, outside activities, asked whether he had ever won bowling or tennis championships, whether he had ever played on a champion or a runner-up softball team, found out if there were famous relatives in his family, and generally asked for interesting information. The answers that looked promising were jotted down in a notebook; then the manager amplified the information by a personal chat and, where a story developed, got the employee's permission to contact a publicity outlet.

(Please turn to page 162)

anywhere in the United States.

"Development of self-insulating glass has made it possible to use these larger areas of glass—entire walls of it—without sacrificing precious fuel," Sohn said. "The day of the dungeon-like house appears doomed."

While radiant panel heating won a favorable mention in the "outstanding development" classification, more conventional heating systems were favored by the majority. Forced warm air was declared the most popular.

Homeowners are almost unanimous in their demand for automatic controls for their heating plants, the builders said. Only 4 out of 460 interviewed said that their clients did not insist on automatic controls, and they lived in Florida and Arizona.

There was disagreement, however, on the question: "Do you feel that the ordinary type of thermostatic control provides complete comfort?"

Views were almost evenly divided on the point. Some of the builders said present equipment was good, but that the addition of more thermostatic controls was desirable.

Prospective homeowners appear to know the effects of proper insulation, the poll revealed, and the builders said that in their recommendations to clients they advised use of ceiling and roof insulation first and then insulation of windows and walls.

NEWS SUMMARY OF THE MONTH

The Fuel Oil Situation

THE SUPPLY PICTURE IN FUEL OIL does not look as critical as it did a short time ago, and yet there are still expressions of opinion made that are not in complete accord. Some of these recent statements, from various sources follow:

On the positive side the American Petroleum Institute, thru its president, William R. Boyd, jr., has said that the total estimated supply for the twelve months beginning this April will be eight per cent above the demand for a similar period *last* year. Transportation problems may again arise affecting this situation, however.

The economics advisory committee made a report to the Interstate Oil Compact Commission and in regard to the overall requirements of crude oil said: "A record domestic supply and an excess of imports over exports for the first time in a quarter century will be required to satisfy the 6 million barrel daily domestic demands during the next twelve months if spot shortages are generally to be avoided."

In addressing this same group at their spring meeting in Chicago, Governor Green of Illinois warned that the threat of federal control of the oil industry is "by no means dead." He stated: "Advocates of federal government control of the production, allocation or the marketing of oil have seized upon every emergency situation, real or imaginary, to reassert the claim that state conservation has failed and that some drastic step by some federal agency is called for."

In this regard, two government boards have recently reported on the supply of oil. A house armed forces subcommittee reported that the country is dangerously short of petroleum, jeopardizing national safety and warned that government allocation of steel and rationing of gasoline and oil to consumers may be necessary within the next six months.

Also, the Interior Department submitted a report to Congress which recommended several measures to help the oil supply problem, among them the following: restriction of exports to the irreducible minimum; directing all consumers of oil to cut their consumption to a minimum; suspension of installations of new oil burning equipment, except where use of other fuel is not feasible, or for replacement of worn-out equipment; conversion to alternate fuel when possible.

Stoker Sales

FACTORY SALES of mechanical coal stokers of all sizes and types in March amounted to 5,339 units, an increase of 18 per cent over the 4,507 stokers sold in February, 1948 and 38 per cent above the number of 3,878 sold in March 1947. Sales for the first quarter of this year totaled 12,699 units compared with 10,858 for the like period in 1947. These figures are contained in a report issued by the Bureau of the Census, Department of Commerce.

NWAH&ACA Convention Program

The National Warm Air Heating and Air Conditioning Association has released the program for its Mid-Year Convention that is to take place at the Edgewater Beach Hotel in Chicago on June 29 and 30.

Tuesday, June 29

9:45—Opening Session—Ballroom
Atlee Wise presiding

- a) President's Opening Address.
Atlee Wise, president, National Warm Air Heating & Air Conditioning Assn.
 - b) Ceiling Panel Heating vs. Conventional Forced Air Heating in the new Research Residence . . . R. W. Roose, Special Research Assistant, University of Illinois
 - c) Performance of Gravity Extended Plenum Heating System in the Small Homes Council Research Residence . . . M. E. Childs, Special Research Assistant, University of Illinois
 - d) Floor Slab Construction . . . H. D. Bareither, Instructor, University of Illinois
- Adjournment

12:30 PM . . . Luncheon . . . Marine Dining Room
Guest speaker: Fred Smith, executive vice president, Foremen's League

2:30 PM . . . Afternoon Session . . . Ballroom
C. S. Franke, presiding

- a) Report on Research Investigation—F. L. Meyer, chairman, Research and Advisory Committee
- b) Report on Installation Codes Committee activities and Application Engineering Advisory Committees . . . W. D. Redrup, chairman
- c) Report on Technical Education Committee—Prof. L. G. Miller, chairman
- d) Report on Publicity and Merchandising Committee . . . C. L. Rowley, chairman
- e) Indoor Comfort Conferences . . . Guy Voorhees, instructor

Adjournment

5:30 PM . . . Cocktail Hour . . . West Lounge

Aluminum Shipments

MARCH SHIPMENTS OF ALUMINUM wrought products amounted to 159 million pounds, the highest monthly figure reached in the postwar period, according to a report by the Bureau of the Census, Department of Commerce. The month's shipments were 17 per cent higher than the 136 million pounds shipped in February, and reflected gains in all classes of products.

Aluminum plate, sheet and strip reflected the largest gain, increasing to 127 million pounds, 20 per cent higher than the 106 million pounds shipped in February. The shipments were even higher than the previous postwar peak of October, 1947 when 120 million pounds were shipped.

Featured Speaker at Chicago

WHEN THE MID-YEAR CONVENTION of the National Warm Air Heating and Air Conditioning Association gathers for lunch at the Edgewater Beach Hotel, Chicago on June 29, the group will be addressed by Fred Smith, executive vice president of the Foreman's League. The subject of his speech will be "Management . . . The Responsibility for Leadership."



Fred Smith

The League was organized to instruct and inform industrial supervisory personnel on methods and practices of employee direction and labor relations legislation. Mr. Smith's career has encompassed legal training and sales experience in the course of his rise to the position of director of labor relations of a large shoe manufacturer.

During the war he was a member of the War Labor Board and is a noted public speaker.

The convention is scheduled for June 29 and 30, with the first day devoted to informative and technical sessions and the second day planned for recreation. Reservations should be sent directly to the Edgewater Beach Hotel, Chicago.

Construction Workers Employed

EMPLOYMENT BY CONSTRUCTION CONTRACTORS rose by 163,000 workers during the month of April to a total of 1,790,000, the highest level for any April since 1942. Compared with April, 1947 employment in the industry was higher by 171,000, or 11 per cent. In reporting these figures the Bureau of Labor Statistics said that four out of every five of these workers were employed on privately financed new Construction and that two out of five were employed on nonfarm housing.

Housing Starts

APRIL SAW A NEW HIGH LEVEL of activity in the field of construction when 90,000 new permanent nonfarm dwelling units were started, according to the Bureau of Labor Statistics, Department of Labor. This is an increase of 29 per cent over the 70,000 in March and 34 per cent above the 67,000 units started in April, 1947. Nearly all the units started were privately financed.

Home building for the first four months of 1948 showed an increase of 51,800 units, or 25 per cent, over the same period in 1947. The total for this period this year is 257,000 units.

Pipeline to Chicago

THE CHICAGO DISTRICT Pipeline Company has filed an application with the federal power commission to build a new natural gas pipeline to Chicago. The officials of the company stated that the basic reason for the construction of the line was assurance of a steady flow of gas to Chicago. Apparently, the present facilities into the region are operating at peak capacity and any breakdown would cause difficulties in maintaining service.

National Heating Wholesalers' Association

THE PROGRAM OF SUBJECTS to be covered at the Mid-Year Convention of the association, Monday, June 28 at the Edgewater Beach Hotel, Chicago, has been completed. The following subjects will be discussed: "Credit, Credit Controls, and Insured Accounts Receivable," "Relationships between Manufacturers and Wholesale Distributors," "Merchandising by Wholesalers," "Engineering Service Education from Wholesaler to Dealer," "What the Manufacturer Expects from the Wholesaler," "The Truth about the Availability of and Outlook for Steel, Oil and Gas during 1948-49," "Sales Pep Talk," and open forum discussions of the problems of the heating wholesaler.

Gas Industry Needs Steel

GAS UTILITY COMPANIES of the United States will require more than 3 million tons of steel and cast iron, in the next 18 months, to meet the demands of present customers and new housing extensions. This is needed for maintenance, repairs and operating supplies and to alleviate present gas shortages and makes no provision for expansion programs.

Plant structures and equipment for the manufactured, mixed and natural gas companies account for 805,900 tons of steel and 211,400 tons of cast iron. Natural gas companies will need 2,217,400 tons of steel for gathering and transmission lines.

These estimates were compiled by two committees appointed under Public Law 395, relating to voluntary allocations of steel. One committee appointed by AGA surveyed steel requirements of 230 gas utility companies exclusive of natural gas gathering and transmission facilities. A natural gas committee appointed by API gathered data from 100 companies on their requirements for the latter purpose. In making the report the committees pointed out that the gas industry had more than 21 million customers in 1947, serving more than 85 million people.

Construction Problems Are Local

INTERNATIONAL UNIONS DON'T RULE THE ROOST in the home community, says *Practical Builder*. It's the "Local" has the say-so there. The U. S. Dept. of Labor can't send workers or apprentices to builders; it's the local committee who secures men and trains apprentices. The U. S. Dept. of Commerce can't supply building materials as such, it's the local supplier or dealer who has it, or will finally get it, for the builders. FHA or VA at Washington, won't go through a "Vet" loan procedure with builders—the "local" office handles it in every case.

The Gamble Committee, after investigating housing in 31 cities and listening to some 1,075 witnesses, affirms that the housing job is largely a local problem, to be done locally. The Gwinn Committee, still investigating housing "rackets," sees it in the same light. Raymond M. Foley, HHFA Administrator; William F. Patterson, U. S. Dept. of Labor; Harry C. Bates, AF of L; Paul Griffith, American Legion; John H. Fahey, Federal Home Loan Bank; Morris Sayre, NAM, all see eye to eye on this.



RESIDENTIAL AIR CONDITIONING *Section*

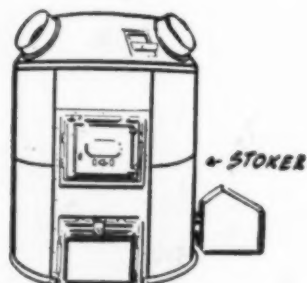
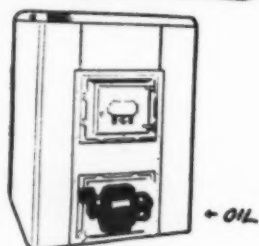
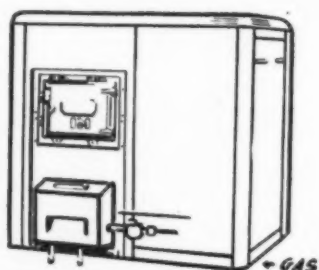
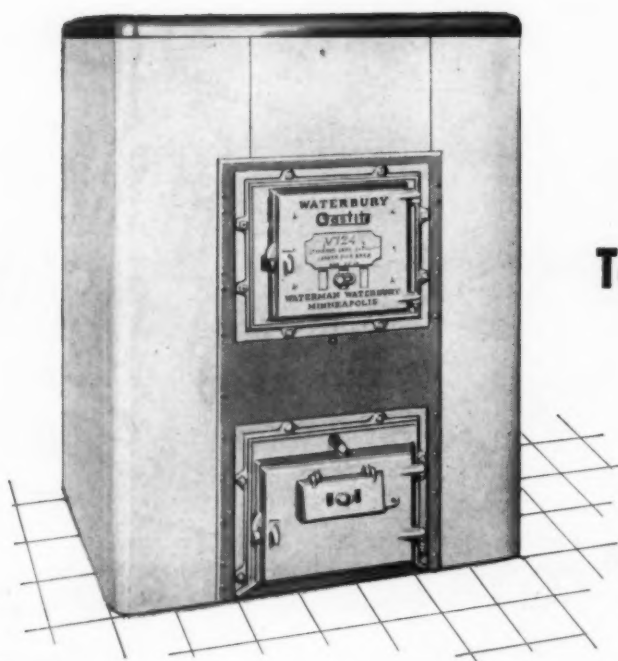
DEVOTED TO HOME AND SMALL COMMERCIAL AIR CONDITIONING

The series, "Correct Practice in Oil Heating" which has been running in this section for some time, has covered almost every phase of the proper procedure for installing an oil burner. This month's message is, in the author's words, "Correctly starting the oil burner is an essential operation before the system can be considered complete." Mr. Mirabile also advocates the establishment of a well-defined and routine starting for use on every job.

Adaptable to ANY Fuel

The
700 Series

To Meet
Today's Problem

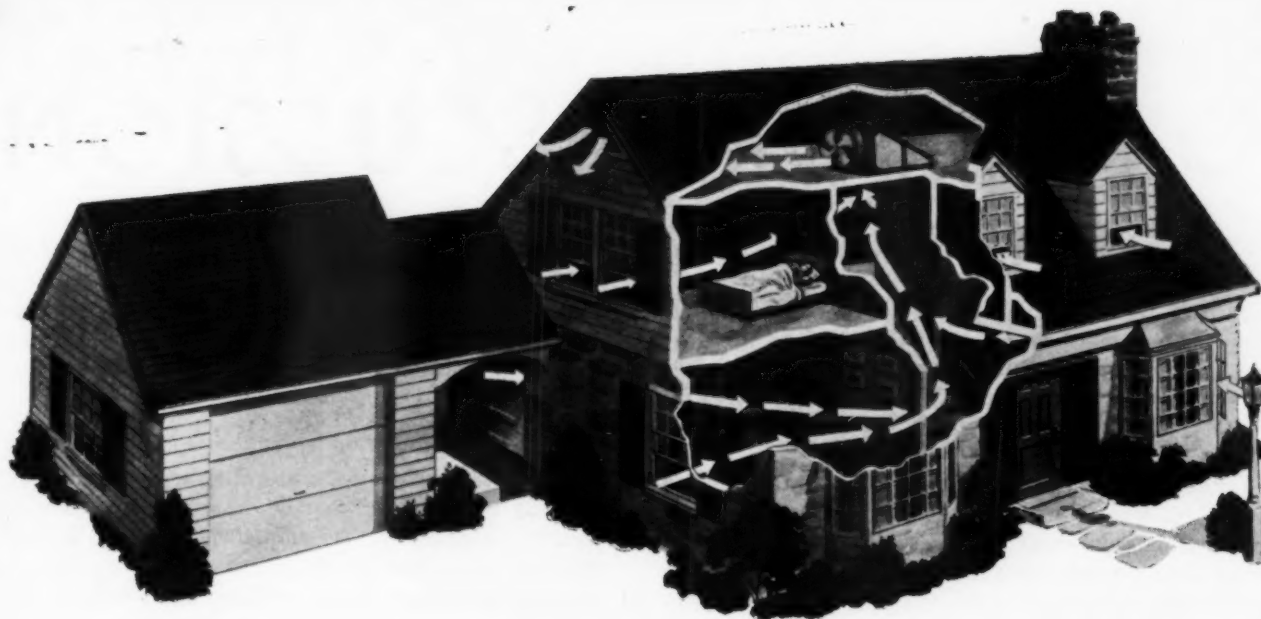


Waterbury

700 Series Coal-Fired Units are made in both round and square gravity models and in a complete winter air-conditioner. All of these units are equipped with the famous Waterbury Gas Tight body—and they convert easily to oil, gas or stoker. As coal-fired units, or converted, they live up to Waterbury's standards of efficiency.

It's What's Under the Casing that Counts!

THE WATERMAN - WATERBURY COMPANY
1122 JACKSON ST. N. E. MINNEAPOLIS 13, MINN.



NIGHT COOLING—A Sales Story

HARRY R. BLASINGHAM

Holcomb & Hoke Manufacturing Company, Inc.

A NEW term, "Night Cooling System," is rapidly being adopted by concerns marketing home ventilating equipment. By selling a function, night cooling, instead of a piece of equipment, the dealer has taken the first step on the road to more effective merchandising in the home ventilating field.

Another big step forward is the selling of a complete system, including the components required for the home owner to turn a switch and enjoy night cooling—a fan, an automatic ceiling shutter, suction enclosure connecting the fan and ceiling shutter, and an automatic control for operating the fan. The dealer sells the complete installation as a package.

If the dealer is not in a position to make a complete installation through his own organization, his next best method of operation is to arrange with an independent contractor to install all cooling system jobs at a fixed price. Then the dealer's salesman is in a position to sell a completely installed job.

Night cooling is not new. There are installations which have been in service as long as twenty years. The basic idea of a large fan turning at low speed and moving a large volume of air at a relatively low noise level has not changed. In these twenty years, however, many refinements have been made in the fan and in the accessories which complement it in the best modern installations.

A scientific approach to blade and venturi design has added much to higher output of air with less horse-

power input and reduction of operating noise level. Balance of fan blade assemblies has been improved and, coupled with better construction of the stationary portions of the assembly, has reduced vibration to near the vanishing point.

The addition of prelubricated and permanently sealed ball bearings to the fan and motor has allowed several reputable manufacturers to announce fans for horizontal installation. Thus, installation is now possible in extremely low attic spaces, installation cost may be reduced and means are provided for the addition of vibration isolation and sound absorption materials to eliminate amplification by the structure of minute vibrations into annoying noises.

The accessories offered by many of the manufacturers of ventilating equipment contribute to a satisfactory night-cooling installation. The automatic ceiling shutter is one of the most important accessories in an automatically controlled installation. It offers automatic concealment of the opening in the ceiling since it opens only when the fan is in operation and closes immediately when the fan stops. This feature eliminates any possibility of the entrance of hot air and insects from the attic when the fan is not operating.

Automatic control of the operation of the ventilating unit is an accomplished fact today and no home-owner needs to turn off his ventilating unit when he retires, losing its full benefit, or arise at 4:00 A.M. to turn it off

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OPEN FOR DISCUSSION

Sizing Large Furnaces

• In this letter E. K. Campbell speaks of the hazards of attempting to install larger size warm air furnaces using the same calculations as used in a residence. Any reader who has been frostbitten in an army barracks is more than familiar with the truth of his statements.—Ed.

THERE is a tendency among furnace men engaged in residential work to calculate and install warm air heating equipment in large buildings on the same basis as in a residence. This often gets them and their customers in serious trouble. It seems there is no general understanding that there are definite differences in methods of approach. Each presents a problem where conditions are entirely different.

The Army made this mistake while constructing barracks during the war. It was assumed that heating a barracks was comparable to heating a residence and so, residential methods of figuring were used. They were supposed to be heated continuously. But they were not nearly as well constructed as a residence and there was a great deal more traffic, with the consequent changing of air. This resulted in poor heating in most buildings and the furnaces were short lived. They are now replacing many of them in the permanent posts and in many cases I am afraid the same mistake is being made again.

Nature of Buildings

One of the basic reasons for trouble is the fact that when figuring the installation on residential standards the capacity of the plant is not adequate. Most of the jobs requiring larger furnaces are in structures that are not continuously heated and the cooling down of the building must be taken into account. The heating plant must be sized to be able to replace that heat that the structure has lost, before the building can be truly comfortable. In a church, for example, several days may elapse between use and the need for heat, and in that time the interior temperature of the church may drop to as low as 25 deg. When we tested the Butler Fieldhouse job in sub-zero weather, the inside temperature was 32 deg at the start of the test and this is not an uncommon temperature in intermittently heated buildings.

In a school it might be quite proper to allow the building to be without heat from Friday afternoon until Monday morning, provided there is sufficient capacity in the heating plant to reheat the mass of the structure quickly. The same principle can apply to warehouses, factories and other commercial buildings. The amount of heat which goes into storage in the mass of the building as the temperature is raised is

important as is the rate of flow into storage. A church, for example, may not reach a state of equilibrium in the period that it is in use. It may be that at no time on Sunday will the mass reach a point at which it is not still absorbing heat, in an intermittently heated building.

Rate of Heat Absorption

The rate of heat absorption will vary with different building materials. We made one test in which we poured a concrete block, simulating a section of wall, with thermocouples buried in the center. We put the block outside in sub-zero weather until it had been chilled to a very low temperature. The block was then transferred into the office, where the temperature was about 75 deg. The temperature of the interior of the block rose at the rate of only 4 deg per hour. Hence, both the *amount* of heat that goes into storage and its *rate* of flow indicate that this factor must be considered in planning an installation.

Dr. F. E. Gleseke (Texas A & M) has calculated that in the period of heating a building the greatest flow will take place when the structure is almost up to temperature, say 60 or 65 deg. He has found that when that point is reached the heat going into storage in the structure may be greater than the calculated heating load. It is evident, therefore, that if this problem is overlooked and the furnace is sized by residential standards the time may come when all the heat being put into the building is absorbed by the mass of the structure. In other words, the temperature curve levels off and stays level until the storage demand is satisfied.

To meet this condition it is our practice to set aside $\frac{1}{3}$ to $\frac{1}{2}$ of the rated capacity of the unit for the express purpose of heating the mass. This one-third of the total capacity, in addition to the calculated heat load, seems to be sufficient for ordinary buildings with frame interiors, but when the construction is concrete with fireproof interiors, one-half addition to the total capacity is needed. In other words, of the 3500 btu per sq ft of heating surface available (as recommended in the Guide) 1750 btu will be used to heat the structure itself.

These factors are frequently overlooked in figuring the heat loss of large buildings and where the buildings are heated continuously the problem is not so great. However, in the larger jobs which require large furnaces neglecting the heat storage factor is a frequent source of trouble to the furnace installer and the customer. If the furnace has the needed capacity it can be adjusted to perform properly, if it is undersized, no adjustment will help.—E. K. CAMPBELL.
E. K. Campbell Heating Company,
Kansas City, Missouri.

Correct Practice In Oil Heating

Part XII *[Starting the Burner—Checking the Wiring—Using Routined Procedure]*

By J. J. Mirabile

Delco-Heat Division

Elliott-Lewis Co., Philadelphia

A CORRECTLY installed oil heating system is a product of research and experience in the fundamentals of fuel oil combustion. It is capable of providing the performance and efficiency that is expected from oil heating today. These elements of customer satisfaction are integrally designed in the components of the modern oil burner. Correct installation practice recognizes the need to assemble and apply all components in a manner that matches the standards attained thru research and experience by the manufacturer.

The completed system is a unification and coordination of a number of elements. Whether it will operate as a safe and efficient system in a particular application cannot be determined until after the installation work is completed. Therefore, correctly starting the oil burner is an essential operation before the system can be considered as complete. Starting the burner includes observation, inspection, adjustment, and test of all major equipment that contributes to safe, efficient, and satisfactory operation. Until this has been done, only the installation work has been completed; the system is not completed.

Correct Starting Pays

Many installers have learned from experience that simply throwing the main line switch will disclose one or several items have not been properly serviced and therefore not ready for a successful and satisfactory start. In searching for the trouble, parts have been prematurely and unnecessarily "adjusted" to correct an "apparent" defect. Often the real defect is more remote than an obvious one and found only after the suspected part has been damaged and forsaken in the search for the gremlin. This procedure often necessitates a replacement part before the job can be started.

Getting the burner off to a successful start requires a well-organized procedure. This will disclose whether all essential parts of the installation are coordinated and ready. This saves time and parts, utilizes the standards built into the equipment and the installation, and satisfies the customer, because he becomes aware of any incompetency as disclosed by trouble at the

starting of the installation. If equipment proves to be defective, after thorough test, it is better to replace the part before the start is attempted.

Oil burners are often started at the end of the day, as a hurry-up job when the tools are being picked up after the installation work is completed and the workmen are getting ready to go home. In these cases, let the installation remain inoperative until the next day or until it can be started properly. If heat is needed, stay with it until the starting routine can be completed. If heat is needed and if it is impossible to complete the entire routine, at least service the electrical and fuel supply systems and allow only the tests for combustion efficiency to remain until the next day.

You cannot afford to allow an installation to operate until it has been checked for safety. In all cases, routined starting procedure at the first opportunity should be the rule. At the time the installation work is completed, it can be started correctly with dispatch. This insures safe, efficient, and satisfactory operation with the first flame.

Starting Procedure

Before the burner is started, the supply of fuel oil in the storage tank should be ascertained by observing the tank gauge. Compare the reading with the quantity delivered. See that the valve in the fuel oil line to the burner is CLOSED.

The fused line switch supplying electric current to the controls should be OPEN.

Open or remove covers from controls and switches to provide access to terminal blocks. This facilitates any tracing and testing that may be required.

All instruction sheets should be collected by the installers as the packages are opened and placed where they are available for reference.

Electrical System

1. Check the wiring diagram for the particular installation. Be sure all wires are connected to the proper terminals.

2. Set the high limit control to its lowest temperature. This opens the hot wire supplying current to terminal No. 1 of the stack relay.

3. Set the room thermostat several degrees above room temperature. Remove cover to inspect contacts. They should be closed.

4. Press the reset button on the stack relay. Consult instructions for installation directions and starting position of the relay. Read thoroughly and adjust carefully.

5. Screw a fuse or fusetron into the line switch. Close the switch.

The burner will NOT start because, if wired correctly, the hot wire connected to terminal No. 1 of the relay is open at the limit control.

At this point the current at both sides of the line switch and the line side of the limit control can be tested with a test lamp.

6. Remove the wire connected to terminal No. 3 of the relay. Advance the limit control until the relay pulls in. This can be determined by listening for the click. The relay will remain in for approximately 90 seconds and should be timed. The oil burner motor will NOT start because the motor lead has been disconnected at the relay. A test with the lamp across terminals No. 2 and No. 3 will indicate if current is available for the burner motor. A test across terminals No. 2 and No. 4 will indicate if current is available for the ignition transformer and electrodes.

The above tests for current supply to the motor and ignition are performed in a few seconds. Since the ignition wire is connected (terminal No. 4), this permits an inspection of the spark across the electrodes inside the furnace, while the relay remains in. A flame mirror inserted through the inspection door permits quick inspection of the spark.

During the period the relay is in, the safety switch is receiving current through the cold contacts of the relay. There is no flame. This is comparable to a flame failure during normal operation. After approximately 90 seconds have elapsed, the relay will drop out. Listen for the click. If you are inspecting the spark at the time, you will observe it extinguish.

The above procedure provides for a general overall check of the wiring, the main line switch, the high

limit control, the stack relay, and the ignition. The flow of current has been traced to the motor terminal on the relay and the spark at the electrodes. Also, the system has failed safely.

7. Open the line switch.

8. Reconnect motor lead to terminal No. 3 of the relay. Press the reset button.

Fuel System

9. Remove the nozzle pipe assembly from the burner by drawing it through the opening provided after disconnecting the transformer wires and the oil line where it enters the air tube. Unscrew the nozzle from the adaptor. Check the nozzle for firing rate and spray angle.

Always use good tools of correct size for oil line work so they will not slip when pressure is applied.

10. Unscrew the strainer and insert of the nozzle. Clean each part.

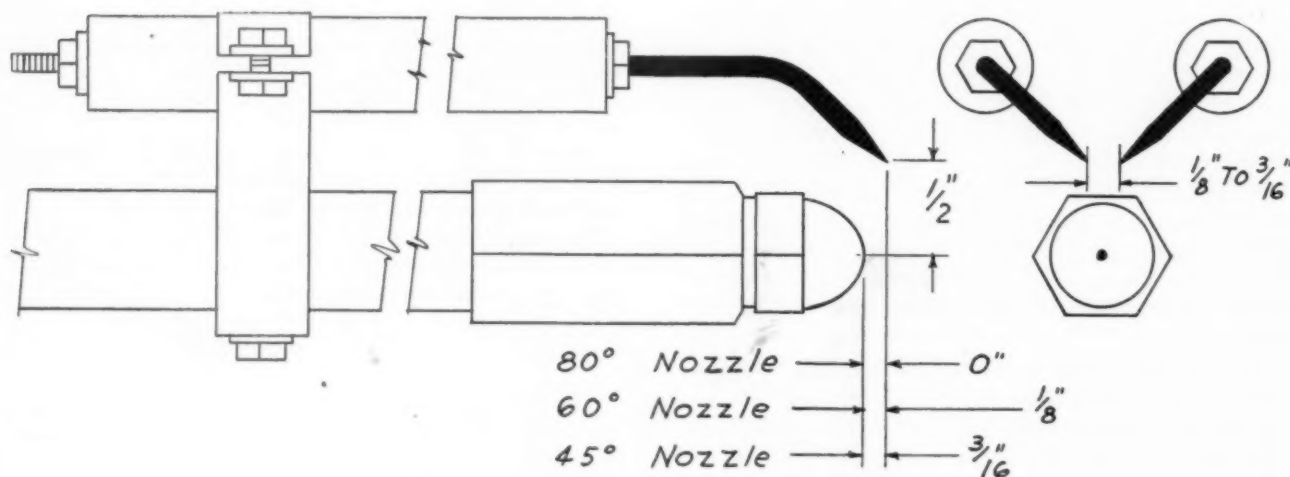
The inside of the nozzle body should be inspected for metal chips and dirt. Wipe out with a paper or cloth swab wrapped on wood. Clean the orifice with slivers of hard wood. The slots of the insert may be cleaned by running the straight edge of a hard piece of paper through them. Brush the strainer with a stiff brush, using cleaning fluid or fuel oil as a vehicle.

Do not use metallic tools for cleaning the nozzle. The slightest scratch may affect its operating characteristics. Wood, paper, and cloth may be used because they are softer than the nozzle, thereby eliminating the possibility of scratches.

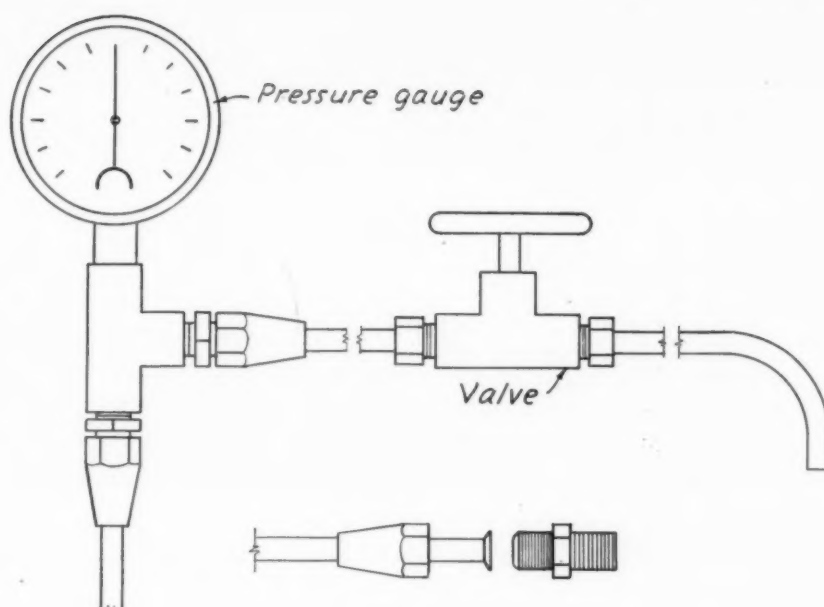
Be careful that your hands and tools are clean. If you have a small particle of dirt on them it may accidentally get into the nozzle. This would necessitate removing the nozzle again because a minute particle may cause a defective oil spray or clogging. All work on the nozzle assembly should be done over clean papers to prevent picking up dirt from the floor or workbench.

Inspect the nozzle pipe and adaptor for chips or dirt. Blow through it to see that it is open.

After cleaning, flow hot water over and through all



Electrode Settings—Accurate inspection of the electrode settings insures a good start and prevents service calls due to carbonizing of the points



Pressure Gauge Assembly—Consists of a pressure gauge, tee, valve, several lengths of tubing and fittings.

When the flared tubing adaptor is screwed into the gauge port of the fuel pump, air can be bled by opening the valve. When oil flows it can be directed into a receptacle. This removes the possibility of oil odors, that can result when the pressure gauge is backed off and the oil allowed to squirt around on the burner and the floor.

parts under the full pressure of the hot water faucet.

11. Assemble all parts with clean hands and tools.

The insert is screwed into the nozzle body snugly. Not too tight because they may distort the body. After screwing on the strainer, the nozzle is screwed into the adaptor. This must be an oil-tight fit and requires good tools. If the wrenches slip, the electrodes may be damaged.

12. Now check the points of the electrodes and see if they conform to the manufacturer's recommendation. Measure with a ruler.

If manufacturer's recommended setting is not available, set the points about $\frac{1}{2}$ in. above the orifice and $\frac{1}{8}$ in. apart. For 80 deg spray the points should be flush with the face of the nozzle and for 60 deg, $\frac{1}{8}$ in. ahead. These adjustments may be made after loosening the clamps which hold the porcelains. Be sure the electrodes are tight in the porcelain. If not, the rod may turn from vibration and eventually cause a puff or a rough start. See that the porcelains are secure in their holders.

The above electrode settings will be accurate for most burners, but if the recommended setting is available, it should be followed.

13. Reinstall the nozzle pipe assembly in the air tube. Be sure it is pushed all the way into proper position. Reconnect the oil line and transformer wires and replace cover. Be sure all connections are tight.

14. Follow manufacturer's instructions for the removal or insertion of the by-pass plug in the fuel pump.

In one pipe systems, the plug is removed; creating an internal by-pass. In two pipe systems, the plug is inserted; creating an external by-pass.

15. Remove the plug from the pressure gauge port and screw in a pressure gauge. See instructions for location.

Priming the pump may be facilitated by assembling several lengths of tubing, a valve, a tee, and necessary fittings between the pressure gauge and the gauge port. When the valve in the tee line is open, the pump

will prime. When the stream of oil comes solid, it can be directed into a container instead of squirting around the burner, as when the pressure gauge is backed off to release the air.

16. Inspect all fittings, gauges, filters, and valves in the oil lines for irregularities and tight connections. If all connections were made properly and made-up with good tools, there should be no leaks or oil odor after the system is in operation. This is a mark of mechanical ability. Open the tank valve after any visible and tested defects have been corrected. Open the valve in the pressure gauge assembly.

17. Open the inspection or fire door.

18. Set the limit control at its recommended temperature.

19. Close the line switch.

The burner will start but there will be no flame until the pump primes.

20. Hold a receptacle under the valve in the pressure gauge assembly and when a solid stream of oil flows, close this valve.

The pump is primed and oil will flow through the nozzle where it is ignited by the spark across the electrodes. The system is in operation.

Observe the flame through the door. If it is small and streaky, close the primary air shutter until it blossoms out to correct size, by observation. There should be a tinge of smoke at the outer edges, as it laps up along the top of the combustion chamber.

21. Observe the oil pressure. It should be approximately 100 pounds. If adjustment is required, consult instructions.

22. Insert the flame mirror through the inspection door and observe the shape of the flame. It should not touch the sides of the combustion chamber. If too narrow, install a wider nozzle. If too wide, do not try to shrink it by increasing the primary air. This lowers combustion efficiency. Install a narrower nozzle to get a narrower flame.

(Please turn to page 168)

COMFORT COOLING Whets Appetites

R. C. NASON
Long Island, N. Y.

The photo below shows Tony's, a popular New York cafe after its recent remodeling. The increase in trade that it has enjoyed is as much attributable to that discharge grille that you see at the ceiling as it is to the artistic decorations. Almost any flourishing eating house is a prospect for comfort cooling. Ask 'em and see!



WITH the return of competition to the restaurant field it has become necessary to use all possible devices to lure the hungry customer inside to sample the specialties of the house. Well aware of the fact that an establishment that is cool and comfortable, as well as clean and attractive, has a hot weather edge over the non-air conditioned competitor, Tony's, on Upper Broadway in New York City, installed a cooling system during a recent remodeling job. Planning on a 10 deg inside-outside temperature difference the installation required a mechanical refrigeration unit of 20 tons capacity.

The restaurant itself is 40 ft wide and 100 ft deep and the ceilings are 8 ft. A basement contains two small offices and a liquor cellar. In the front section there is the main restaurant and the adjoining bar,

there is also a back dining room and the kitchen is located behind the bar. The kitchen equipment is fitted with a ventilating hood that has its own exhaust fan. This exhaust fan draws out the odors of cooking and also takes air out of the bar area. Most of the front of the restaurant is window area with an eastern exposure, but awnings minimize the morning sun load.

Cooling Calculations

In the calculation of the cooling load for the job, occupancy was the largest factor. Seating accommodations are for 175 persons and 6 tons of the capacity of the unit are required for this aspect of the problem. The sunload was small since the only windows were at the front (east) of the establishment and they were shaded by full awnings. The problem of cooling load



The view above shows the dropped ceiling that conceals a 48 by 4 in. lateral duct. These ducts were designed to blend right into the general decor of the restaurant. The mirrored surface conceals a riser supplying the duct. On the right can be seen the return air grille below the shelves. The chimney is directly behind the grille, well insulated to prevent heat leakage.



due to exposed roof area was also slight, as only one section of the back restaurant, 40 by 20 ft, had an exposed roof and the surrounding buildings were tall enough so that direct sunlight seldom filtered through. Another usual factor in cooling calculations, lighting, was not very great since the establishment makes use of soft, indirect lighting to provide a more intimate atmosphere for diners.

While the kitchen has a separate ventilating system it was not calculated to eliminate all heat from that source, so, some intrusion of heat from the kitchen wall into the restaurant proper was included in the calculations. Other factors contributing to the cooling load were a boiler room in the basement, a chimney passing through the restaurant in an insulated column and the small private offices in the basement. The liquor cellar was also included in the list of rooms to be cooled.

The chimney enclosure occupies 5 by 6 ft of space and the chimney itself is surrounded by 4 in. of insulation. The enclosure also contains part of the return air duct, an elbow of the fresh air duct and the exhaust duct from the evaporative condenser of the cooling unit.

Sizing Unit

When these various factors were reduced to their proper terms in cooling requirements the load was figured at 20 tons. The unit that is illustrated was chosen for the installation—a mechanical refrigeration-evaporative condenser type of plant. Operation of the job has been satisfactory since the owner has verified its ability to maintain the 10 deg temperature difference specified and said that it has even exceeded that figure.

The air distribution system is always a subject of interest in a cooling installation so the details on this

phase follow. Aluminum was the material used in the ductwork.

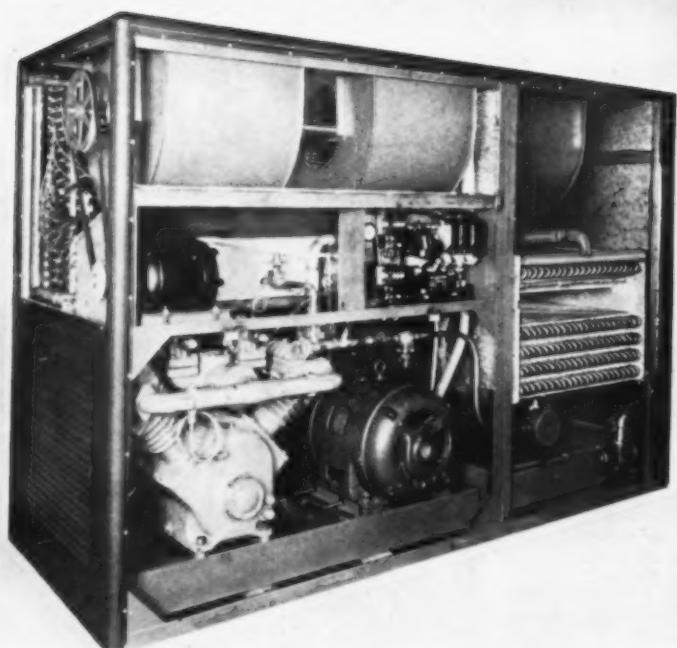
Ductwork Details

The cooling unit is located centrally and three supply ducts lead, respectively, to the front part of the restaurant, the bar and the rear restaurant. The main to the front dining room is 24 by 20 in., to the bar and cellar 48 by 4 in. and to the rear dining room 20 by 12 in. The supply duct to the front section feeds two 48 by 6 in. risers that become laterals across the ceiling of the dining room. It was not possible to conceal the risers in the wall so they were enclosed in wainscoting and faced with blue mirrors. The ceiling laterals (48 by 4 in.) were faced with the same acoustical material used for the ceiling and fitted with long, shallow side grilles and terminate in 48 by 4 in. grilles. Each lateral had a side grille 96 by 4 in. and one 48 by 4 in.

The side grilles in the lateral ducts complement rather than oppose each other and the end grilles discharge into the bar.

Air is returned to the unit for recirculation by means of a single return grille (see photo) which is located in the front face of the chimney enclosure. Several ceiling diffusers were used in the job and one of them was located near the chimney enclosure on the theory that it would dissipate any pockets of warm air that might form in that area. Diffusers were also placed in the corners of the private offices to eliminate corner stagnation.

The air supply for the various areas was allotted as follows: 2000 cfm to the bar, 3000 cfm to the main dining room, 2000 cfm to the rear dining room and



To the left is the twenty ton capacity, mechanical refrigeration—evaporative condenser unit that was selected to handle the cooling job in this restaurant. It has proved to have more than ample capacity for the installation. The unit is also to be used for winter ventilation.

750 cfm to the offices in the basement. The regular capacity of the cooling unit is 8000 cfm giving a margin above the 7750 figured. The condenser exhaust fan handles 5000 cfm. It is planned to use the unit for winter ventilation as well as summer cooling.

Any description of an installation such as this one serves to add emphasis to the growing importance of the market for summer cooling. The warm air heating dealer is particularly favored in this regard since the type of heating system that he handles is most easily converted to year around air conditioning. As com-

petition for trade becomes keener in various retail fields the consciousness of the need for consumer comfort also shows a rapid increase. This awareness of the need for air conditioning points the way to a cardinal point in modern day sales of commercial heating installations. When figuring the jobs, offer an alternate bid that includes all year *indoor comfort* or if the customer is not prepared to make the additional outlay immediately, plan the system so that it will operate on a cooling cycle and make it possible to add the needed equipment for cooling at a minimum cost.

Fuel & Combustion Chambers

SAVINGS OF FUEL OIL of up to 25 per cent could be accomplished in many thousands of home oil burners, by the simple procedure of repairing and rebuilding combustion chambers where needed and verifying the sizing of the chamber to the burner. This phase of the fuel supply picture was discussed by Mr. J. D. McCullough, Babcock & Wilcox Co., at a recent meeting of the New York State Oil Heat Association.

"In the present critical fuel situation, many consumers do not realize that the method of construction of the combustion chamber in which the fuel oil is burned is a major factor in the amount of oil consumed in their homes." The speaker urged a modernization program aimed at getting the most out of each gallon of fuel oil.

Maximum fuel oil savings depend on correct size of the combustion chamber, the method of construction,

and the use of lightweight firebrick, he explained.

"Lightweight firebrick are able to accomplish fuel savings," Mr. McCullough stated, "because tests have shown that they can be heated up more rapidly than heavy firebrick. Normally a domestic oil burner operates intermittently, and while it is off the firebox cools. When the burner starts up again, the oil does not burn completely until the firebox is hot, and soot is formed during this period of incomplete burning. The soot represents wasted fuel and also covers the heating surfaces so they are prevented from efficiently absorbing heat. The faster heating-up characteristics of the lightweight insulating firebrick shorten the soot forming period from minutes to seconds. This not only saves fuel but reduces the necessity of frequent removal of soot from the heating system.

"The lighter the firebrick, the greater the fuel savings accomplished," Mr. McCullough said.

Sell September Rush Jobs — Now!

INSULATION of Concrete Floors (I)

LAURENCE SHUMAN

Technical Staff

Housing & Home Finance Agency

RECENT research and experience has demonstrated that floors, satisfactory for dwelling purposes, can be built of concrete.

Concrete floors are becoming increasingly more popular with home builders primarily because of their low cost and because of the reduction in other structural costs which they make possible. The lowest cost concrete floor results when the slab is laid on the ground. Slabs laid over crawl spaces are somewhat more expensive but are also being used extensively.

Until recently, concrete floors frequently have been used solely because of lower costs with very little consideration given to the characteristics of the material or concern for performance relative to comfort and health. As a result, many concrete floors, especially where the slabs are laid on the ground, are actually "cold" floors. From experience with examples of inadequately designed and constructed concrete floors, a general public prejudice has developed against all concrete floors.

This study presents the known facts about concrete floor slabs on the ground and over unheated crawl spaces, and forms a basis for the design of satisfactory concrete floors.

Known Facts About Concrete Floors

The Housing and Home Finance Agency sponsored a series of tests conducted by the National Bureau of Standards, Washington, D. C., early in 1945, to ascertain some of the characteristics of concrete floors and to determine what could be done to make them more satisfactory. In brief, their findings indicate that:

- a. At the same temperatures, concrete floors feel colder to the touch than do most other materials used for floor finishes or coverings. This sensation is due to the fact that concrete is a better conductor of heat than most floor materials and consequently withdraws heat from the skin at a more rapid rate.
- b. The actual (surface) temperature of a concrete floor can be just as satisfactory as that of a floor of any other material. This is true because the temperature of any material tends to approach the temperature of other substances in contact with the material. The surface temperature of any flooring will tend to approach the temperature of the air with which it is in contact. The

proximity of this approach in temperatures depends only on the rate at which heat is lost from the floor.

- c. The actual temperature of a concrete slab on the ground is, or will become in time, somewhat higher than the temperature of an inadequately insulated floor over an unheated crawl space. The temperatures of the slab and the earth under it change gradually with the temperature of the air above the slab and approach the average annual inside temperature of the house. On the other hand, the temperature within a crawl space lies somewhere between the inside temperature of the house and the cold outside air temperature. The temperature under the floor with the slab on the ground is estimated to be from 15 to 50 degrees higher than with the crawl space condition, depending on the ventilating conditions of the crawl space. The temperature of the earth under the crawl space has only a minor effect upon the crawl space temperature.
- d. The heat loss of slab floors laid on the ground is primarily through the edge and the heat loss through the center of such floors is relatively small. In the case of concrete floors laid on the ground, heat is lost to the ground below and through the perimeter of the slab to the foundation wall and the adjacent ground. The ground around the perimeter presents a comparatively thin layer for insulation purposes and permits a quick escape of heat to the outside air. The heat loss to the ground below the slab is practically negligible in comparison to the heat loss of the house. This is due to the fact that the ground temperature is considerably higher than the outside air temperature because of the high insulation value of the thick layer of earth through which heat must flow to reach the outside air.
- e. The heat loss of concrete floors laid over a crawl space is principally through the edge but the heat loss through the center of such floors is relatively higher than with floors laid on the ground. In the case of concrete floors laid over crawl spaces, heat is lost through the center of the slab to the crawl space and through the perimeter of the slab to the foundation wall and thence to the outside air. The heat loss to the crawl space is the lesser of these losses and depends upon the crawl space temperature which

This article is reproduced from Technical Bulletin No. 1, a publication of the Housing and Finance Agency, Washington, D. C.

lies between the house temperature and the outside air temperature. Insulating the underside of the entire slab against such downward heat loss increases the comfort of the slab surface to some degree but fails to reduce and actually increases the loss of heat which is conducted through the slab to the perimeter and lost through the slab edges.

- f. Insulating the concrete floor slab at the edge protects it from heat loss to the outside. Since the greatest rate of heat loss is at the perimeter of the slab, the provision of insulation, at the edge and for a distance under the slab, will retard this loss. This will produce a higher temperature on the upper surface of the slab and thus increase comfort and decrease fuel consumption in the most efficient manner. Such insulation likewise produces a more even surface temperature over the entire floor. Insulation at the edge is much more important with concrete floors than with floors of other materials because concrete conducts heat more readily than most other building materials.
- g. Near the outside walls, the temperature of a concrete floor properly insulated at the outside edges is likely to be higher than the temperature of other floors. The temperature of any floor near an outside wall is lowered by cold air which drops down along the inside of the exterior wall. Since concrete is a better conductor, heat from its warmer central portion will be conducted more readily towards this cooler edge, thereby raising its temperature.
- h. Concrete floors laid on the ground during the winter and in early spring are apt to be initially colder than slabs laid during the summer and early fall. It takes a long time for cold earth and the slab over it to be warmed up adequately by indoor air. After a year or two, this difference in temperature will be negligible. Also there is apt to be a greater tendency towards condensation in the colder floors. This too will disappear after one or two heating seasons.
- i. Concrete floors may be subject to condensation, especially in very humid weather during the summer. Concrete floors, being somewhat cooler in summer than the air over their surfaces, may be subject to condensation of moisture from that air. Under such conditions condensation will not normally be visible. A periodic examination is recommended and, if necessary, occupants should remove rugs during the summer.

Design and Installation Factors

Aside from purely structural factors, any concrete floor should be designed to produce comfortable living conditions and to conserve fuel by restricting the heat loss. The important items for consideration are the floor temperature which can be maintained and the method of insulation to achieve the desired result.

For comfort, the floor temperature should not fall below 60 deg F at approximately one foot from the outside wall when the room temperature is maintained at 70 deg F. The temperature of the floor farther from the outside walls will, of course, be higher. This condi-

tion may be accomplished by one or a combination of the following:

- (1) By insulating the edges of the concrete slab laid on the ground and extending the insulation for a distance under the slab around its perimeter.
- (2) By insulating the slab edge of concrete floors laid over crawl spaces and insulating the exposed wall of the crawl space.
- (3) By providing a finished floor of adequate insulating value over the concrete.
- (4) By the use of rugs or similar floor coverings.

Methods (1) and (2) are generally more effective than insulation placed under the entire slab surface and are easier to install in a satisfactory manner. Method (4) should not be used separately unless the covering material is of a type which will not be affected by the condensation of water vapor on the slab surface underneath.

The selection of insulation to be used in any of the methods listed above depends upon several factors as follows:

- (1) The durability of the insulation for use in the selected location within the structure.
- (2) The strength of the insulation to withstand the pressure of the earth or of the loads placed upon it.
- (3) The relative insulation value of the materials.
- (4) The total cost (in place) of the insulation.

Insulating materials placed in or near the ground will probably be subject to attack by moisture, mildew, termites, etc., which may eventually destroy the insulation or materially affect its insulating value. Coating with asphalt or pitch cannot be relied upon adequately to protect materials which are otherwise subject to deterioration in moist conditions.

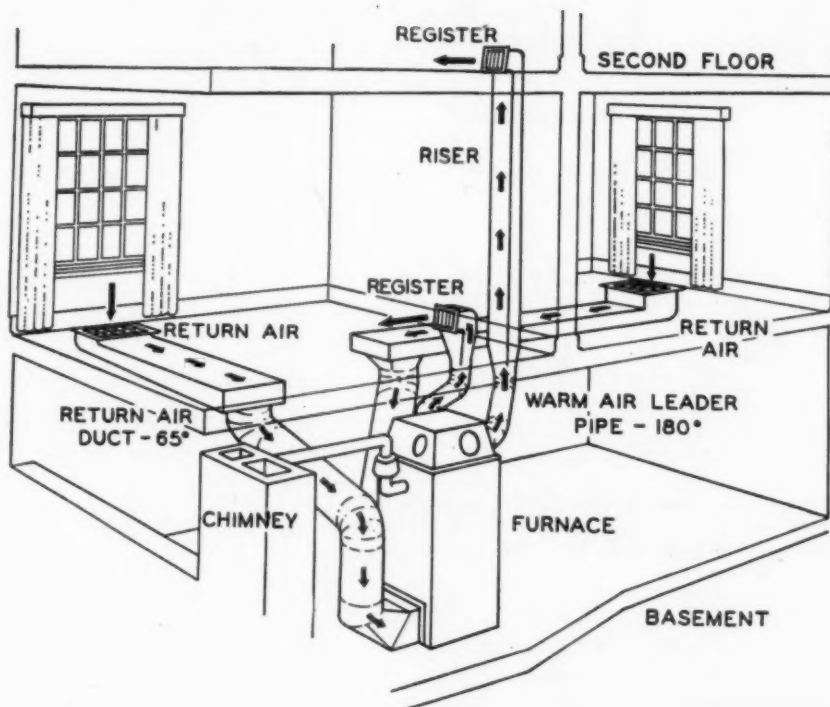
Pressures from the earth or structural loading will compress or otherwise destroy the effectiveness of insulating material which has not sufficient structural strength to maintain its form under the conditions of use.

Where a material depends upon coating with asphalt or coal tar pitch for protection it is necessary to select the coating carefully, bearing in mind that the solvents in pitch will affect asphalt. This is important where such coated materials are to be used in contact with roofing felt.

Table A contains information about several materials which might be used to insulate the perimeter of concrete slabs and crawl space walls. The materials listed, except untreated cane or wood fibre boards, are not subject to destruction by termites, insects, etc., nor will exposure to moisture have any appreciable effect upon them.

Table A

1. **Material** Cellular glass enclosing sealed in gas, such as "Foamglas."
Thickness: 2", 3", 4", 5".
R Factor: (per 1" thick) 1.82 to 2.22
Characteristics: Crushing strength approx. 150 lbs. per sq. in. Water absorption
(Please turn to page 172)



How About GRAVITY?

While there has been a great swing to winter air conditioning in the past years there will still be, for some time, a class of housing that cannot use this type of system for basic economic reasons. Some of the advantages to be gained by a properly engineered gravity heating installation are presented in this article.

IN THE year 1947 844,476 warm air furnaces were shipped to distribution channels. Of these, 46 per cent, or almost 400 thousand were gravity circulation furnaces. Therefore, it is obvious that although forced air circulation equipment has gained wide acceptance and broad application, there still remains a very definite field for the gravity circulation furnace, especially when the latter is also of modern design. For certain house designs and floor plan arrangements, and where overall cost is a major factor, the gravity furnace can provide advantages which should be thoroughly considered when determining the most suitable type of heating for a given application. These advantages may actually offset those of the forced air circulation furnace when the factors affecting a proper application are fully recognized.

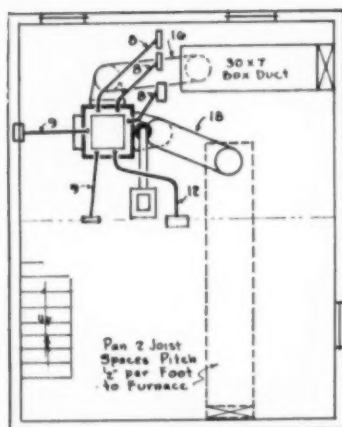
Let Nature Work!

* From a strict engineering standpoint, it is as possible to obtain satisfactory air and heat flow by letting nature do its work in causing flow, (utilizing the difference in weight between cool and heated air) as it is by

forcing air circulation by means of a fan or blower. (There are a number of factors which determine the advantages and limitations of each of the two types which must be considered.) The gravity furnace can provide just as satisfactory heating as the forced air type when properly applied. However, when these conditions cannot be met to produce this necessary weight or pressure difference for gravity air circulation, then a gravity installation should not be used.

Basement Is Needed

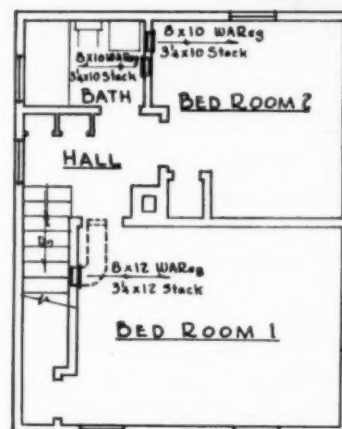
The first major requirement for a successful gravity furnace installation is that the furnace be located low enough in relation to the registers so that the pressure created by the difference in the weight between the cool return air and the heated air is sufficient to create the necessary circulation. Thus, a basement is virtually a necessity for installation in a home or other building. Secondly, the house should be of such general form as to keep the lengths of ductwork as short as possible and the individual heat pipes nearly equal in length, so that flow losses in the duct system are at a minimum.



BASEMENT PLAN



FIRST FLOOR PLAN



SECOND FLOOR PLAN

These plans show how a gravity heating plant can be engineered into a home that is suited to it, use short runs and yet leave the basement relatively clear, with good headroom.

and are evenly distributed. This suggests that the overall house floor plan be rectangular or more or less square with little or none of the characteristics of rambling or ranch house form evident in the design. If the house is of two-floor design, so much the better, as greater height is thus afforded for the vertical duct system. A full basement is unnecessary, providing the furnace itself is under the first floor near the center of the building. However, there must be a sufficient height from first floor joists to the partially excavated portion to permit the installation of ductwork.

Ideas on Ductwork

Contrary to old time practice, and perhaps the ideas of some, it has been found that it is not absolutely necessary that the ducts from a gravity furnace plenum be so installed that they slope gradually upward toward the floor as they approach the registers. Since it is the difference in height between the heating unit outlet and the air outlet in the rooms that produces the flow, the ducts can closely parallel the floor overhead in the basement. It is necessary to make the ducts of standard size for gravity heating larger than for a forced air system, but the difference in size need have little effect on basement head room clearance. Nor need the duct system prevent the use of parts of a full basement for a recreation room, laundry, etc. Some of the ducts can often be placed between the joists so that no head room is lost. The same conditions apply to any return-air duct system. Standard practice is to pitch heat pipes evenly 1 in. upward per lineal foot of distance between the furnace connection and the basement boot or connection to the register or wall stack. In numerous cases the rise is taken all at the furnace. When this is done, the height between the furnace and the point of pipe connection to the connection with the register boot or stack should be equivalent to 1 in. per lineal foot of the distance.

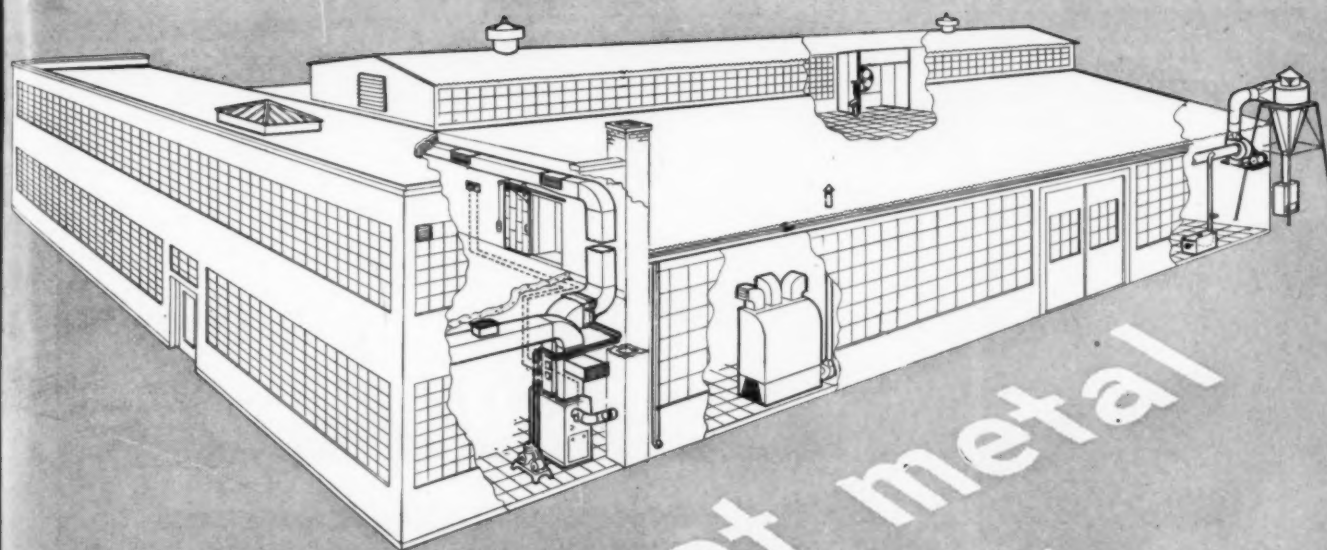
The illustrations show in plan and elevation how a gravity furnace can be designed into a home and meet the stipulated engineering conditions. It is a matter of

engineering the installation to comply with existing conditions, rather than merely putting a furnace in the basement, running ducts to rooms, and hoping for the best. Unless the duct sizes, as well as the furnace capacity, are calculated on the basis of gravity flow, unsatisfactory heat at desired points will result.

When the house design is suitable and the heating system correctly engineered just what does a gravity furnace simplified, non-mechanical installation offer to the home builder and home buyer? Briefly this, both installation and operating costs are lower than for a forced air system. With today's building costs at high levels, these lower costs may make the difference between a popular selling price for a home, and one which is a little too high for the many GI's and others interested in owning their homes at this time; or, if a higher sales price is acceptable to the buyer, he can be offered a more complete house including equipment which the builder could not otherwise afford to offer. The installed price difference between a good forced air and a good gravity system is often sufficient to allow for such items as storm windows, weather stripping or insulation which would further reduce operating costs to the home owner.

It Will Do the Job

A gravity system will provide most of the advantages of forced-air heating when the system is properly engineered to the small house of suitable form. It will provide equivalent temperature control, equivalent even heating throughout the building, equivalent humidification (if desired) and satisfactory air circulation. Air circulation may not be as rapid as with forced-air, but it can be just as constant and liberate just as much heat to the rooms. Incidentally, since the rate of air flow is slower, air filters are not so essential to air cleanliness. If a basement recreation room is desired, a separate warm air circulator for this room is probably necessary, but its cost of installation and operation is nominal.

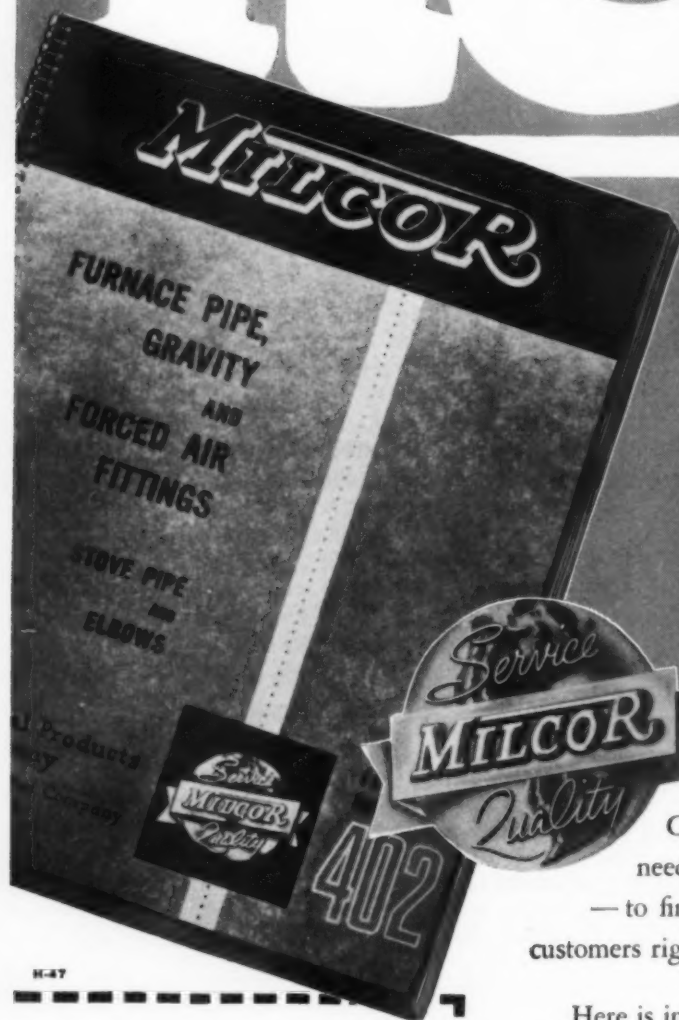


sheet metal *Section*

DEVOTED TO SHEET METAL CONTRACTING AND FABRICATING

Use of a ventilating system to speed the drying of silage and improve its quality has been a growing practice in the southern states. A new series titled "Correct Practice in Farm Ventilation" begins in this section and its first topic is Barn Hay-Drying. The design principles and installation are simple. The decrease in spoilage of hay and upgrading that result from barn hay drying help to sell the system.

new



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Here's
The House



Here's
The Siding



SHOP-MADE FROM ALUMINUM SHEET — USING A HAND BRAKE

H. GORDON HILL
Chatham, Ontario

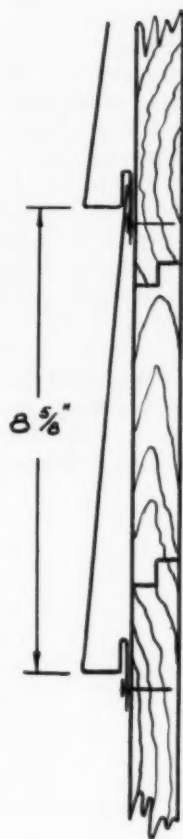


Figure 1, shown to the left, gives the dimensions of the siding and also illustrates the manner in which the nails are concealed by the method of fabrication. This drawing does not indicate the concave formation that is described in the text but makes it possible to see how each piece snaps into the piece above it.

MANY home builders have admired the modern exterior finish obtained with aluminum siding and there is a probability that a tremendous field is developing for this product. In addition to being fire-proof, weatherproof and permanent, the smooth hard surface of aluminum makes it possible to enamel the

siding with an automobile finish that will last for years. However, the purpose of this article is not to sell aluminum siding but rather to show the sheet metal trade where it may benefit from the writer's experience in making siding on an eight foot hand brake. This may seem like going back to the horse and buggy days, knowing that aluminum siding may be readily purchased but it is simply a matter of relative costs.

For example, the house described in this article is one that is of adequate dimensions in these days of inflated building costs and yet the siding used entailed expenditures of \$325 for aluminum sheets, \$40 for primer and enamel, and \$3 for aluminum nails. This compares very favorably with the cost of pre-formed siding. So, even where warehouse prices are paid for the aluminum sheet there is plenty of scope for the sheet metal man to supply his builder friends and even to handle the application of the flashing and siding to the house.

Another important feature in favor of small shops making aluminum siding is that each piece is a standard size and may be fabricated for stock. This is a big advantage when there is a lull in the weekly activity. No special machine set-up is required, so, provided the brake is free, a spare hour may be profitably utilized in making aluminum siding for stock.

Material Specifications

For the best results, it is advisable to use aluminum alloy 3-S, full hard, but very satisfactory siding will also be obtained from 3-S, $\frac{3}{4}$ hard or 2-S, hard.

The thickness should be 0.028 in. (#21 B & S Gauge) although the author has used 0.025 in. (#22 Ga.) for

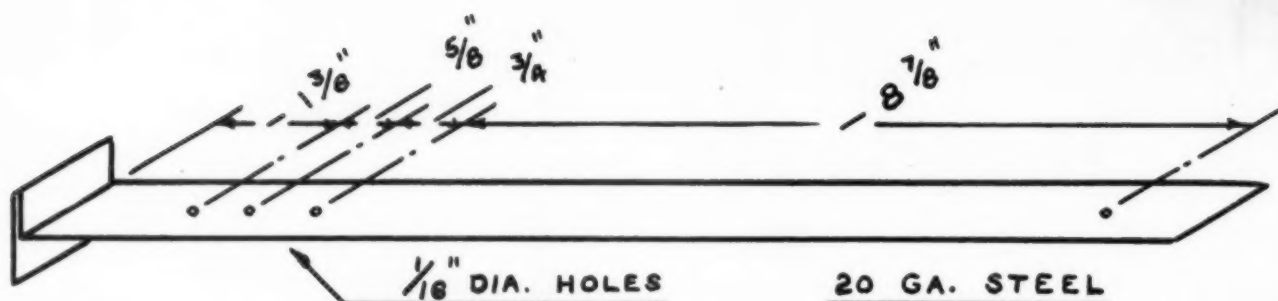


FIGURE No. 2

the upper story where the siding is not so likely to be damaged. However, on the standard basis of 0.028 in. aluminum, and referring to the deep siding used on this job, the weight would be 0.394 pounds per lineal foot. This happens to be the same as the weight of the sheet per square foot because this style of siding is fabricated from sheets which are 12 in. wide.

Fig. 1. shows how the siding assembles $8\frac{5}{8}$ in. to the weather so the relationship is established that one

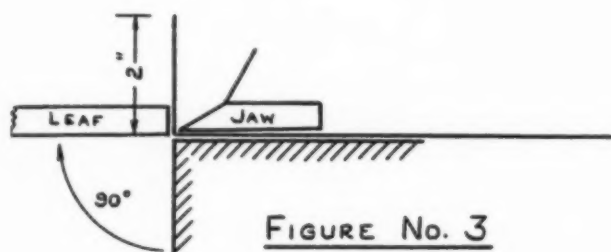


FIGURE No. 3

square foot of the original sheet will cover 0.718 sq ft of wall area. Likewise 1392 sq ft of flat sheet is required to cover 1000 sq ft of wall area. In estimating the amount of material actually required, allowing for cutting, this figure must be increased by 10 per cent.

Fabrication in the Shop

Assuming that the aluminum is available in pieces one foot wide and that they are of a length to suit the brake, clapboard siding is fabricated in the following manner:

To mark out the sheets quickly, two templates are made up as detailed in Fig. 2. Two men then work at the ends of a sheet making light dots with a scratch-awl, through the template holes.

The first brake operation is simply a 90 deg bend as shown in Fig. 3. Then the piece is pulled out and the short flange inserted in the brake. It should be explained here that when a steady run of siding is being produced, a spacer bar may be screwed to the brake leaf to save punching one of the template marks. The work is then folded back the full swing of the leaf and removed from the brake. One man turns the piece end for end and the other man picks up a piece of 18 ga. steel about 2 in. wide which serves as a spacer for the next operation.

In Fig 4, the work has been inserted in the open

brake with the steel spacer in position. The operators now hold the work firmly under the brake jaw and pull their hand levers down together. This gives the work the initial shape, but it is necessary to release the jaw, push the formed sheet with the spacer still in position well into the brake and come down again to make a perfect job.

Now the work is turned end for end again, and formed in the brake to the shape illustrated in Fig. 5. The final brake operation is to release the jaw, pull the work out to the last set of marks and form the stiffener edge at the top of the siding. This edge bending treatment not only stiffens the siding but also makes each strip slightly concave when assembled on the side of the house. A further advantage is observed when applying the siding, due to the fact that as each piece is shoved up into the one above, it springs tightly against the wall and leaves both hands free to nail it in place.

Now there is the job of punching holes in the flanges for the nails. First an explanation as to why $\frac{3}{16}$ in. dia. holes will be suitable for our job whereas some commercial siding has slots $\frac{1}{2}$ in. long to allow for expansion and contraction, under extreme temperature changes. In the first place, the pieces described are only eight or ten feet long compared to sixteen or eighteen foot lengths on the market. Then, forgetting all about the theoretical co-efficient of linear expan-

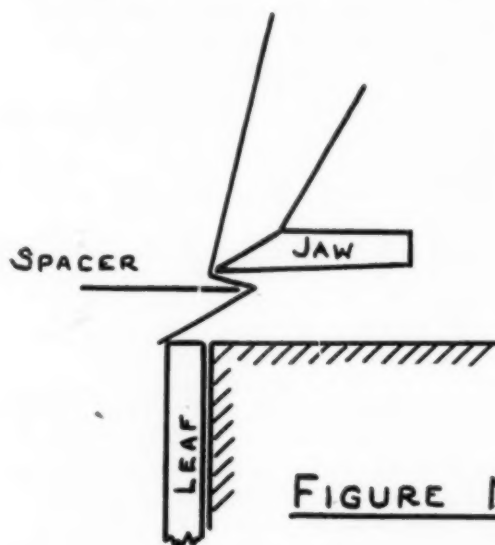


FIGURE No. 4

sion the author found that an eight foot length of siding, which was applied to an outside wall on a hot summer day and painted, had only contracted by $1/32$ in. at each end on a zero winter day. This was clearly visible where the paint joint had opened up at the end and indicated that the aluminum itself was not down to zero, due to the heat given off by the wall. So if $3/16$ in. dia. holes are punched every four to six inches in the nailing flange of the siding, adequate precautions have been taken. It is not necessary to actually nail the siding this frequently, but, it can not be predicted where the strip will be cut off to length and the last nail should be within four inches of the end to make a good job.

Cleaning and Prime Coating

Several good chemical processes have been developed to treat aluminum against weathering and we will probably have siding offered to us commercially in the near future with a treated surface.

But, let us get back to our small shop where the siding is ready for cleaning and prime coating before being sent out to the job. First, wipe dirt and grease off with a dry cloth and then dip in a good de-greaser which does not leave any oil film. After the de-greasing liquid has evaporated, dip the piece in a narrow tank containing zinc chromate dissolved in a suitable thinner. One half-pint of zinc chromate to a gallon of thinner is plenty and makes a better bond for paint than a heavy coat. This work should be done outside away from open flame or in a well-ventilated paint room. If it is not desirable to go to the expense of making dip tanks, a fairly good job may be obtained by brushing.

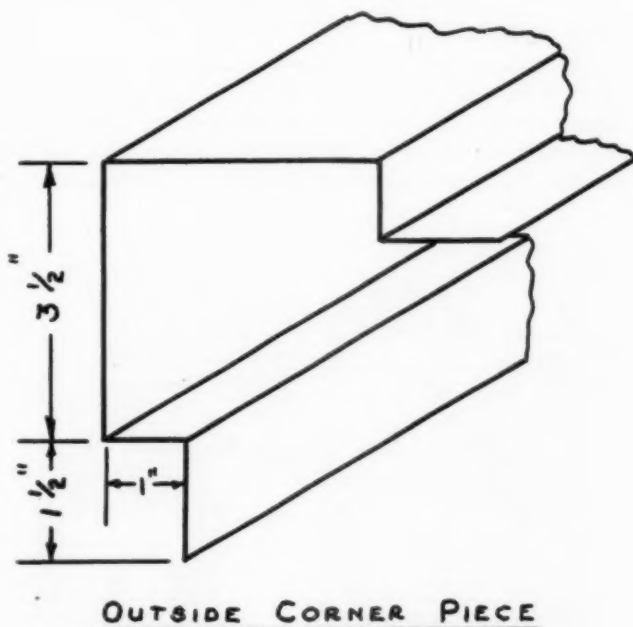
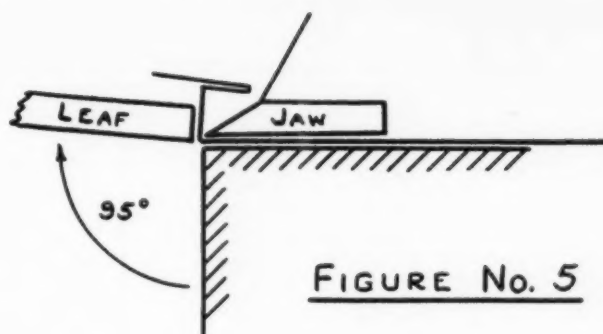


FIGURE No. 6.



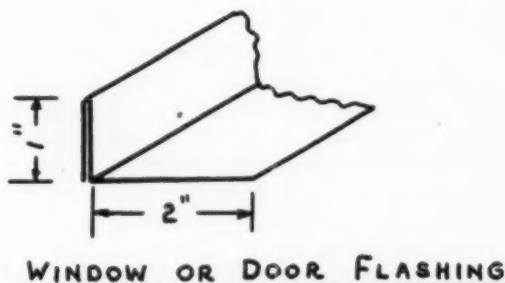
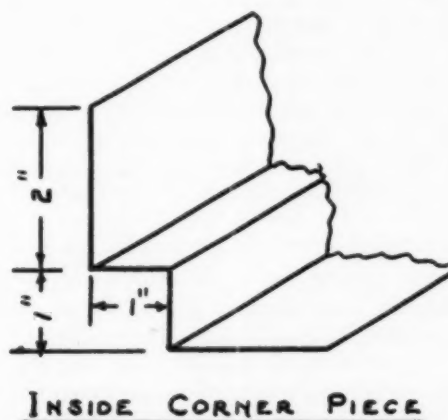
Flashing and Corner Pieces

Before any siding is applied to the house, all window and door openings must be properly flashed and corner pieces fitted. These details are illustrated in Fig 6 and are simple enough to fabricate that further description is not necessary. Flashing material must be cleaned and prime coated at the shop similar to the siding.

The window and door flashing is protected from the sun by the siding so it is not necessary to punch holes in these flanges. However, the corner pieces receive the direct sun rays and it is advisable to punch $3/16$ in. dia. holes for nailing similar to the siding.

In Fig. 7, the entire assembly is illustrated to explain the function of each part. It will be obvious that when the siding is fitted over the flashing, it is very difficult to reach the inside corners with a paint brush.

As shown in the picture of the unfinished front wall, the flashing and corner pieces have received the first



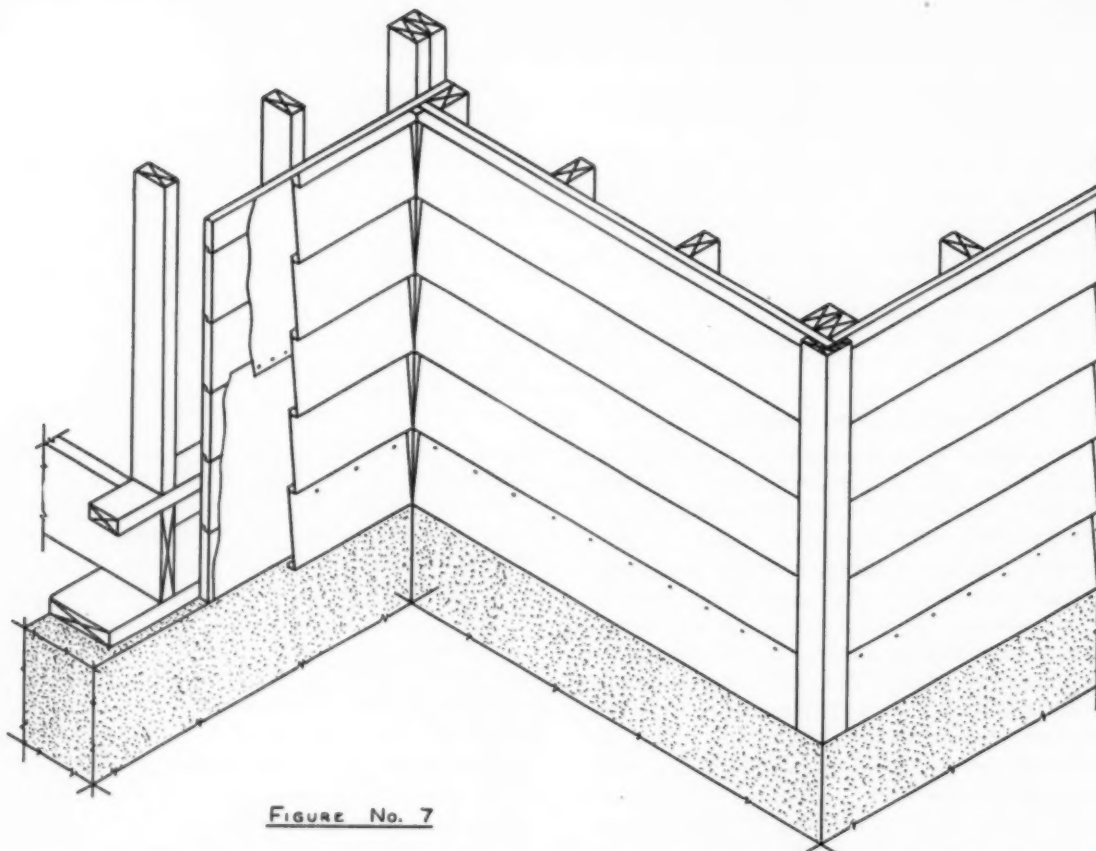


FIGURE No. 7

coat of white enamel before starting to apply the siding.

In flashing windows, the strip under the sill is nailed in place first and then the two side pieces fitted to slightly overlap the bottom strip. The top piece is cut about $\frac{3}{4}$ in. wider than the window frame so that the ends may be hammered down over the side strips to shed rain water effectively.

When brick chimneys are flashed, the joint between the brick and the wood sheathing should first be sealed with caulking compound and the aluminum flashing pressed well into place before the caulking sets.

Application of Aluminum Siding

Aluminum roofing nails are used in applying the siding to avoid the galvanic action which may take place when dissimilar metals are in contact.

This type of siding is applied from the top downwards, so, in order to eliminate unnecessary cutting, some consideration should be given to the position of the first layer. Take a measurement from the top of the upper windows to the roof line on the wall as shown by letter "x" in Fig. 8. Divide this distance by $8\frac{5}{8}$ in. to find the number of full courses of siding which will be used. Now for the top piece of siding, either trim a few inches off the upper edge or apply a fascia board as illustrated. In either case, the top course of siding is nailed on first and then the moulding or cap lapped over to provide a neat finished appearance. It is extremely important that the first piece of siding should be checked with a spirit level so that a true start is made and even parallel lines carried around the entire house.

The second row of siding is now set in place by in-

serting the top edge in the slot of the piece above. This covers the nails very effectively and makes a watershed down the wall face. A hardwood block should be placed under the lower projection of the siding and lightly tapped with a hammer to get each piece up to the full depth of the slot.

Due to the slight break which was made in the top edge of each piece of siding, it will be observed that a spring contact is created at the joint which eliminates any looseness or rattle. The spring action also holds the bottom of the aluminum clapboard tightly against



Here is a picture of the house taken when the application was just beginning and showing the way the siding is applied—starting at the top and proceeding down.

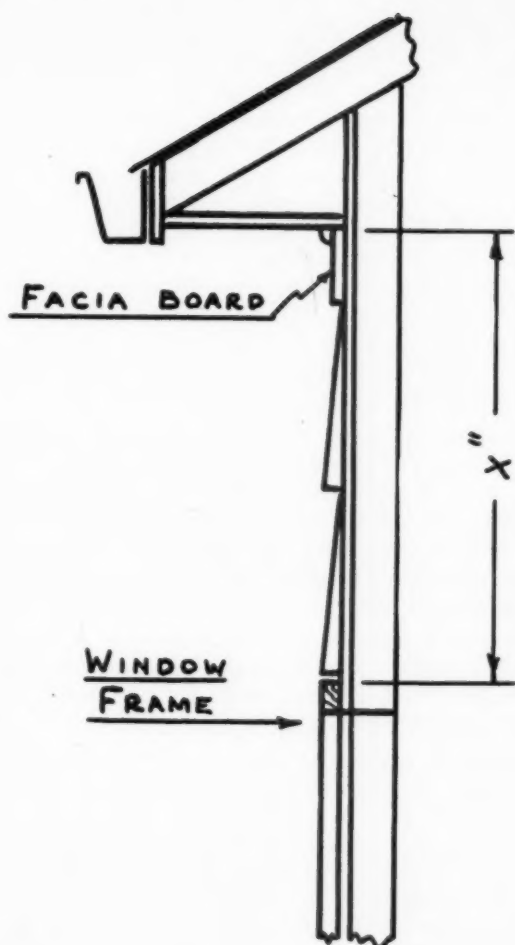


FIGURE No. 8

the wall. This is a decided help when a man is working all alone.

Cutting the aluminum siding to any desired length is readily accomplished by first making a pencil line (using a square) across the face of the piece. Straight snips are then used to make a cut from the top down to the projection. The vertical flanges are now cut with compound pattern snips and by bending the two halves of the siding back and forth twice, the remaining horizontal section will break through. This actually takes only a few seconds and is much faster than any sawing method.

To make a lap joint at the ends of the siding, it is necessary to snip away about 1 in. of the vertical flanges as shown in Fig. 9. The projecting section is then lapped over the mating piece and tapped up into the slot above. If it is found that some joints do not lie close together, a small aluminum nail may be driven through the outer piece into the wall to hold it tightly. Do not nail through *both* pieces where they overlap or expansion difficulties may take place.

Clearance of approximately $1/16$ in. should be left between the ends of the siding and corner pieces or flashing. This will prevent any bulging tendency which the aluminum siding might otherwise develop on a very hot day.

On a wall which is relatively clear of matched windows, there is a danger of the rows becoming slightly off horizontal and this feature must be checked every few courses. The irregularity may occur for several reasons such as:

- (1) Original sheets not being sheared exactly 12 in. wide.
- (2) Variation in forming on the brake.
- (3) All courses of the siding not being tapped up to the full depth of the slot before being nailed into place.

Knowing that these conditions may prevail, the man applying the siding uses a light stick of wood about ten feet long which he marks as a height gauge. For the upper half of the wall, he measures from the roof line and for the lower half, he checks on the cement foundation level.

If a section of the siding is found to be, say, $1/4$ in. too low at one end in relation to the adjoining courses, this discrepancy is readily corrected by snipping off a thin triangular piece from the top of the next layer. In this manner, a very even job may be carried through which will bring the bottom course level and of equal width all around the foundation.

In order to shed rain water properly over the foun-

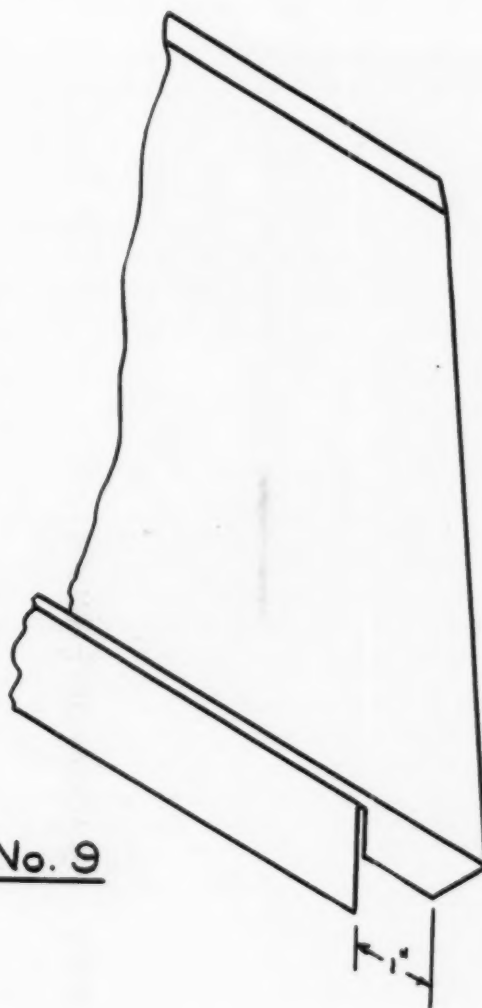


FIG. No. 9



The beauty that is given to a house by the deep shadow lines produced in this siding is clearly seen in this photo. The paint used was a synthetic enamel.

dation, the last course should lap over the top of the cement by about 1 in. as shown in the detail of Fig. 6. This arrangement drips the water away from the foundation without having any sharp projections which are always dangerous to children playing around the house.

Naturally, the last course of siding is not nailed through the regular bottom flange and this should be snipped off before setting the layer in place. Nails are driven in a neat evenly spaced row about two inches from the top of the siding to hold the last course in place.

Can We Make Enough Aluminum?

THE ALUMINUM INDUSTRY in this country is now more than twice as big as observers predicted it would be, when the war ended. More than two billion pounds are being shipped each month and yet the volume of demand indicates that it is not nearly enough. And this demand is entirely domestic, since the needs of the European Recovery Program have yet to be filled and the expansion of the Air Force has not started.

These factors indicate that the aluminum being used is devoted to products or processes that either existed before the war or have been developed since. The average consumption before the war (1936-1939) was 320 million pounds. Today's shipments are more than seven times as large and 1947 shipments were more than six times as large as the pre-war average.

And these figures do not give the entire picture since aluminum has most often replaced other metals on a square foot for square foot basis and not on a pound

Painting

This part of the job gives the owner great satisfaction due to the uniform white effect produced with symmetrical shadow lines below each course.

A standard, white synthetic enamel is applied, similar to air dry paints for automobile body work. The prime coated surface must be wiped free of loose dirt and care taken to paint on a dry day with practically no wind. Each coat will take only five or six hours to dry, but it is advisable not to apply two coats the same day. As a matter of fact, in summer weather, no painting should be done after four o'clock in the afternoon or the paint will catch too many flying insects in the evening. However, they are easily brushed off the next day before applying the final coat.

A regular contractor will have adequate scaffolding which can easily be moved around the house for the painting work, but it is interesting to know that one man may apply the siding and paint the entire house with nothing more than an extension ladder. This is simply a matter of doing three rows at a time and moving around to another wall while paint is drying.

Only five gallons of white enamel were required to paint two coats on the house illustrated in this article. The relatively low cost brings out an important advantage in using aluminum siding.

In order to obtain the same permanent features on the shutters as with the siding, these were formed from # 18 Gauge (3-S, ½ Hard). They were oven baked with a shamrock green wrinkle enamel to match the roof and finally given a coat of clear exterior varnish. The shutters were nailed in place with 3 in. cadmium plated spikes through holes previously drilled in the borders.

Many complimentary remarks have been passed on the general appearance of this home and there is no doubt that aluminum siding has a great future. Before many years, it may be possible to purchase aluminum at a reasonable cost which is surface treated to withstand the elements and also permanently colored so that exterior house painting will be a thing of the past.

for pound basis. As a result the volume, figured on this basis, is even greater than already indicated. The position of aluminum in the non-ferrous market gives an interesting picture of incredible growth. Before the war, in 1939, it ranked far below the non-ferrous metals:

Copper	1.59 billion pounds
Lead	1.33 " "
Zinc	1.19 " "
Aluminum	0.32 " "

Between 1939 and 1947, however, aluminum registered the biggest gain of all the metals:

Aluminum	1.68 billion pounds
Copper	1.08 " "
Lead	0.87 " "
Zinc	0.47 " "

As a result of this gain, even on a weight basis aluminum passed zinc by 1947. Copper and lead still lead aluminum on shipments by weight but have already been passed in shipments by the square or cubic foot.

Reclaiming Wood Waste

WALTER RUDOLPH
Erie, Pennsylvania

ONE of the oldest sheet metal shops in Erie, Pa., a division of the Gust Krack Co., has for years done a considerable amount of contracting in local plants for such common installations as spray painting booths, dust exhausting systems, tool room enclosures and welding booths. But a recent development in its industrial work has been quite successful, namely, contracting for wood waste reclamation installations.

Several years ago John Henke, shop superintendent and production manager, studying possibilities for increasing shop volume and versatility, evolved the idea that proved unique to local plants. Following completion of another job in Swanson Oar, a woodworking factory in nearby Albion, Henke broached the subject of working out a sheet metal system for making use of the tons of sawdust and shavings that, at the time, were a waste headache for plant management.

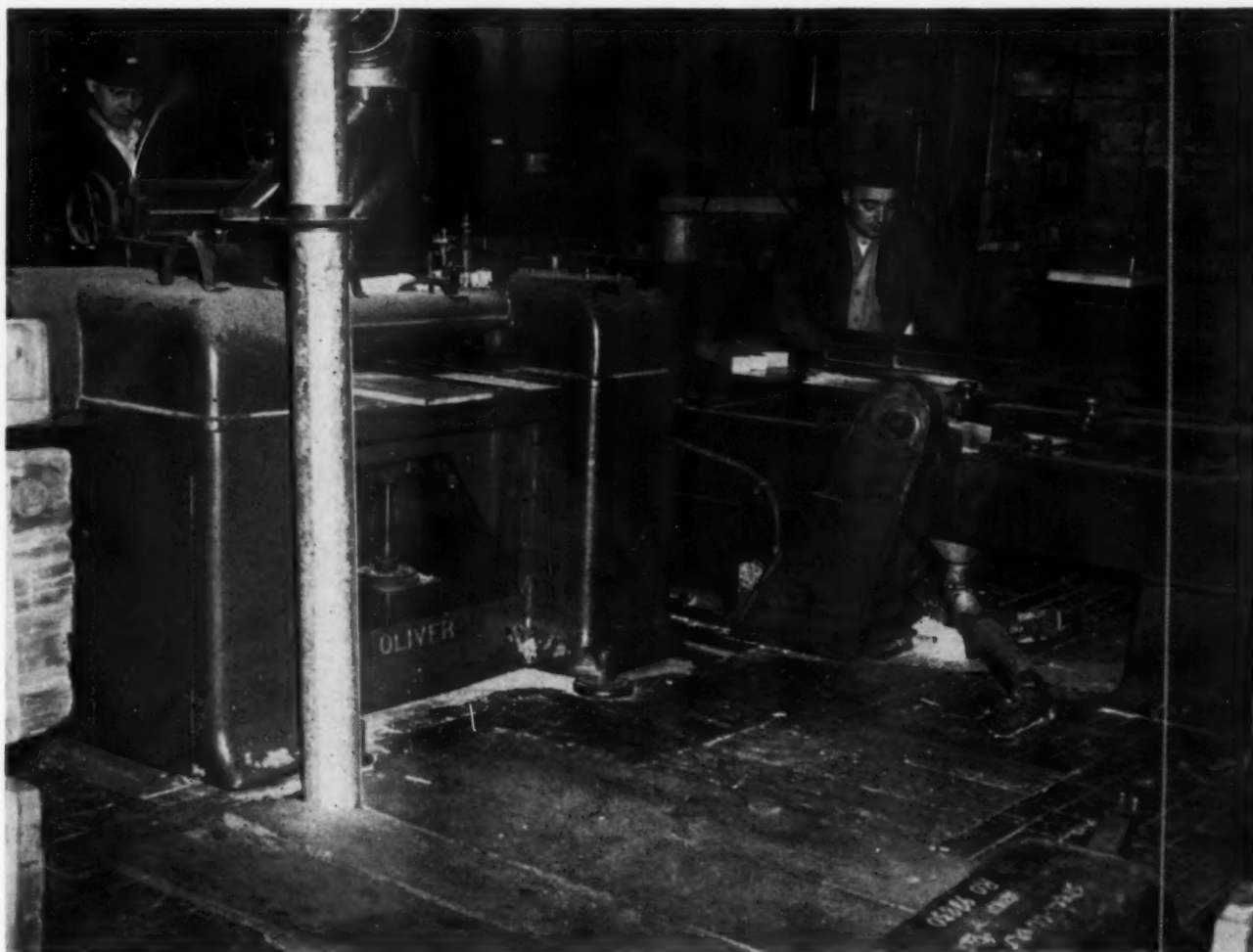
"After looking the plant layout over," said Henke, "I suggested that I could install ducts and design a method of carrying the wood waste from the various woodworking machines into the furnace room at one side of the plant, and directly into the boiler fires.

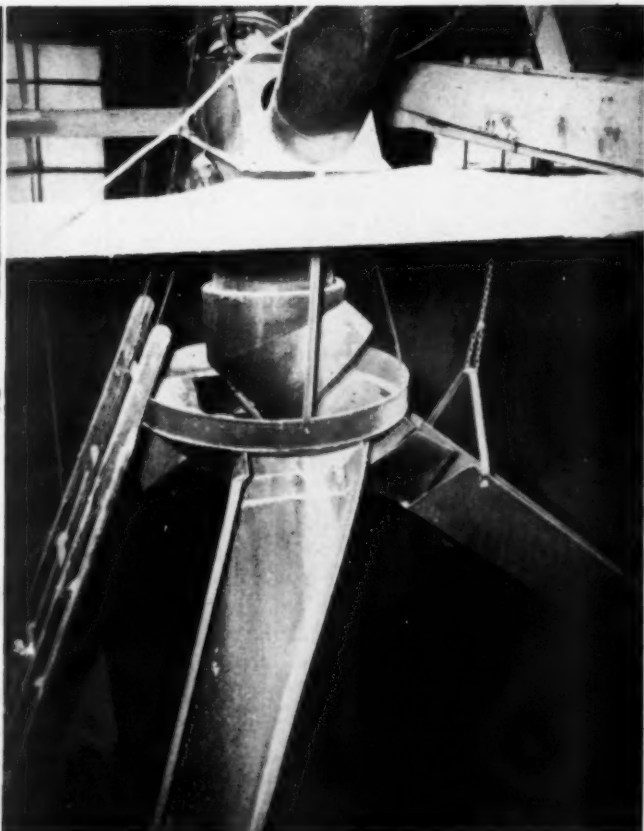
"Everyone consulted expressed grave doubts about such an installation in view of fire hazards. Sawdust and shavings are highly combustible, of course, and opinion was that the boiler fire might follow up the sheet metal duct, burning the waste before it entered the furnace."

Henke believed it could be worked out with maximum safety. In view of the fact that reclamation of the vast amounts of waste would effect a considerable economy in fuel, he was allowed to install the system.

Most interesting of the installation's features, for the sheet metal contractor, are the three-way chute and relating fabrications that allow routing of the

One problem installation was the job below, in which an overhead crane prevented the use of overhead ducts. The contractor proceeded to bury the ducts in the floor of the shop.





The photos show the three-way sawdust chute that is described in the text. Two of the open ducts lead to furnaces and the other the storage pile shown at the left.

waste either into one of the two furnaces or into a storage area directly in front of the boilers. Waste is shoveled from this pile into the furnaces during night shutdowns of the plant, maintaining steam pressure for the drying kilns that are always in use.

The first step in the installation was to brick up "dutch" ovens in front of each furnace, since the boiler could hardly be pierced by a chute to carry waste directly onto the top of the fire. The steel plate furnace fronts were removed and fixed into the face of the ovens, each about 7 by 10 by 10 ft. in size. Oven tops have centrally-located holes that accommodate chute ends and permit dropping of the waste onto the fire beds.

Draft for the fire, and fire-bed level, are controlled through the furnace/or oven front. The fireman uses a long, push-type steel leveling iron to push incoming sawdust to desired portions of the fire, and the flames are conducted through the oven and thence into boiler flues by the draft entering the top and front of each oven.

The furnace room roof is about 25 ft from the floor, or some 18 ft from the oven tops. Ducts that carry the waste to the roof collectors are 20 in. and 24 in. diameter, handling sawdust and shavings from several dozen planers, lathes and other machinery. Much smaller ducts, of course, stem from individual machines into centralized, graduated ducts that lead to two cyclones, and thence through the plant roof and across to the furnace room roof collectors, as noted.

These two exterior ducts are 50 ft or more in length and are cradled on heavy wooden trestles. The roof-top

collectors are similarly braced. Waste leaves them just under the roof in two ducts that split into the three-way chute device, 20 ga. sheeting rather than the 18 ga. of the ducts.

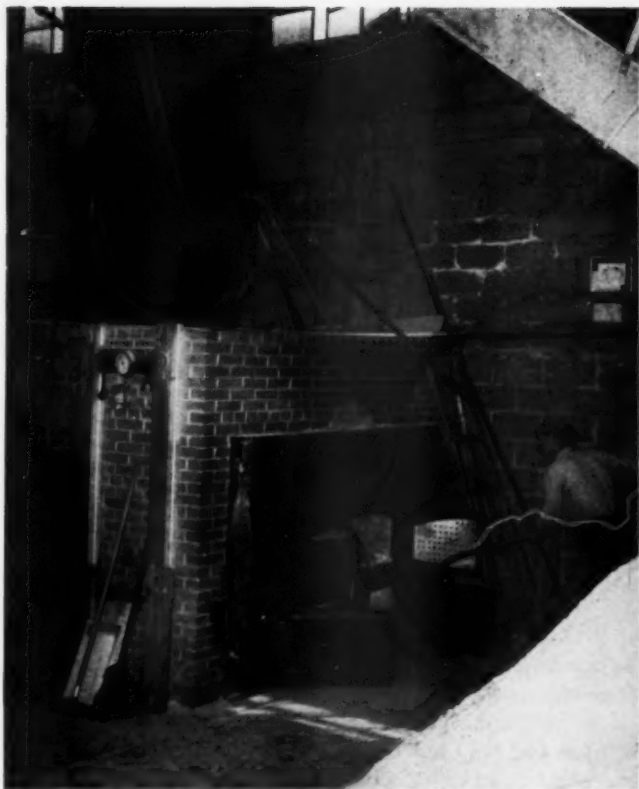
The collector ducts end in an oval to round fitting, 18 in. in diameter and about two feet in length. A 22 in. elbow is fastened to its end, moving freely in any direction on eight steel rollers, simulating roller bearing action. Near the bottom of the elbow is welded a one-inch steel pipe that passes through the pan, from which run the three outlet chutes, and extends to within five feet of the floor about midway between the two ovens.

At the floor end of the pipe is welded a T-handle two feet in length. This gives the fireman remote control of the elbow far over his head. He can turn the elbow to feed the waste into any one of the three outlet chutes, according to fire needs or a storing interval.

The pan, hanging from three straps fastened above to the base of the collector ducts' V, is about three feet in diameter. It contains baffles that confine the waste to whichever outlet duct or chute that the elbow is turned to. The chutes suspended from the ceiling and braced by chains and strap iron, are similar to coal chutes.

After some experimentation the contractor learned that the open chute was necessary to eliminate the danger of flames shooting up through the system, such as happens or could happen in a closed chute or pipe.

The installation at Swanson was so successful that Henke readily obtained contracts for similar work at other plants. Swanson's two boilers keep plant steam



This is one of the "dutch ovens" that was installed on the front of the boiler to facilitate using the waste.

engines and kilns, in addition to heating facilities, well supplied with steam and burn only the wood waste, effecting a considerable fuel saving. Coal is used only at intervals for banking a fire, or several days out of



An exterior storage hopper that was designed so that a truck could drive beneath it and load the sawdust and remove it.

a year when extremely cold weather stretches power and heating capacity requirements.

The contractor spends a day with the operator of each system, following completion of an installation,

Steel trusses were used to support the duct below in order to leave the ground area free for trucks.



demonstrating its operation and maintenance and checking its performance.

In another installation in a woodworking specialty shop in Garland, Pa., factory management reported a reduction of coal needs by 300 tons in a year's operation.

The application of reclamation systems of this kind is not restricted to woodworking plants, as such. Any plant of sufficient size that incorporates a pattern shop, for instance, probably finds itself with a large amount of wood waste.

Shortly after the Swanson job, Rogers Bros., a heavy duty trailer manufacturer, noted the practicality of the system and contracted for a smaller system for their pattern shop waste reclamation. In this case, a duct was run from the shop, a separate building in the plant group, about 60 ft across the plant yard to the boiler room.

Supporting a Duct

It was found expedient to leave the exterior duct, about 14 in. in diameter, unsupported from the ground, using steel trusses beneath it for support. This frees the ground underneath the duct, between the buildings, from supporting columns that might hamper truck movements and present a working hazard.

In a variation of this type of installation, another pattern shop job at National Erie Corp., Erie, Pa., a good-sized foundry, Henke was told that a crane traveling the length of the pattern shop forestalled the use of overhead ducts from the machinery. He got around this problem by digging a shallow trench through the

center of the shop floor and literally burying the main duct, leading to the cyclone blower at one end of the room.

In this instance the contract didn't call for piping the waste to a boiler room, some distance away, but rather for the erection of an exterior storage hopper under which a truck could be driven and loaded when sufficient waste was accumulated.

The duct was run from the blower to the pattern shop roof and thence into the collector on top of the hopper outside the building. The hopper has a capacity of several tons and empties through a circular, centered opening on its bottom.

Fabricated Machine Bases

In addition to pioneering waste reclamation systems of the above nature in the Erie area, the Krack firm was one of the first sheet metal contractors to make machine bases of $\frac{1}{4}$ to 2 in. steel plates, flame-cut to size and specifications and welded in construction.

This item has been popular with many plants because of the saving possible as opposed to making these of cast iron. Drives for plastics machinery, bases for motor and gear boxes with such machinery, and bases for die casting machinery (involving the making of base and framing for built-in oil reservoirs), are typical in this line of work.

The shop division numbers 20 personnel, normally, including a number of key mechanics who served apprenticeships and do most of their work from architectural drawings.

NEW developments often mean improvements for our business institutions and these improvements may be in the nature of new equipment and new methods of doing everyday things in our sheet metal shop.

Adapting these developments to the operations of our business takes time, patience and sometimes a good deal of money. Often changes made in the process of altering such layouts prove costly and when completed do not accomplish the maximum efficiency hoped for when work was begun.

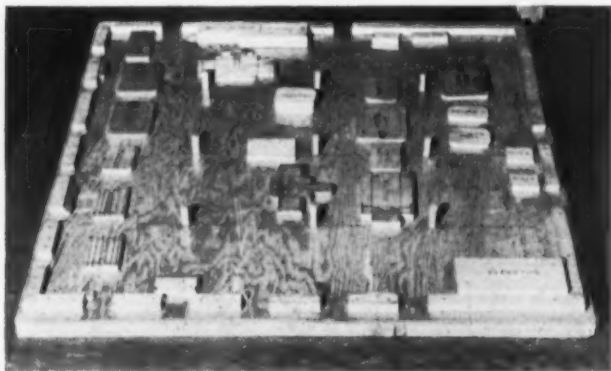
Planning such changes well ahead of their actual installation or adaptation not only saves needless expenditures but may often suggest even better utilization

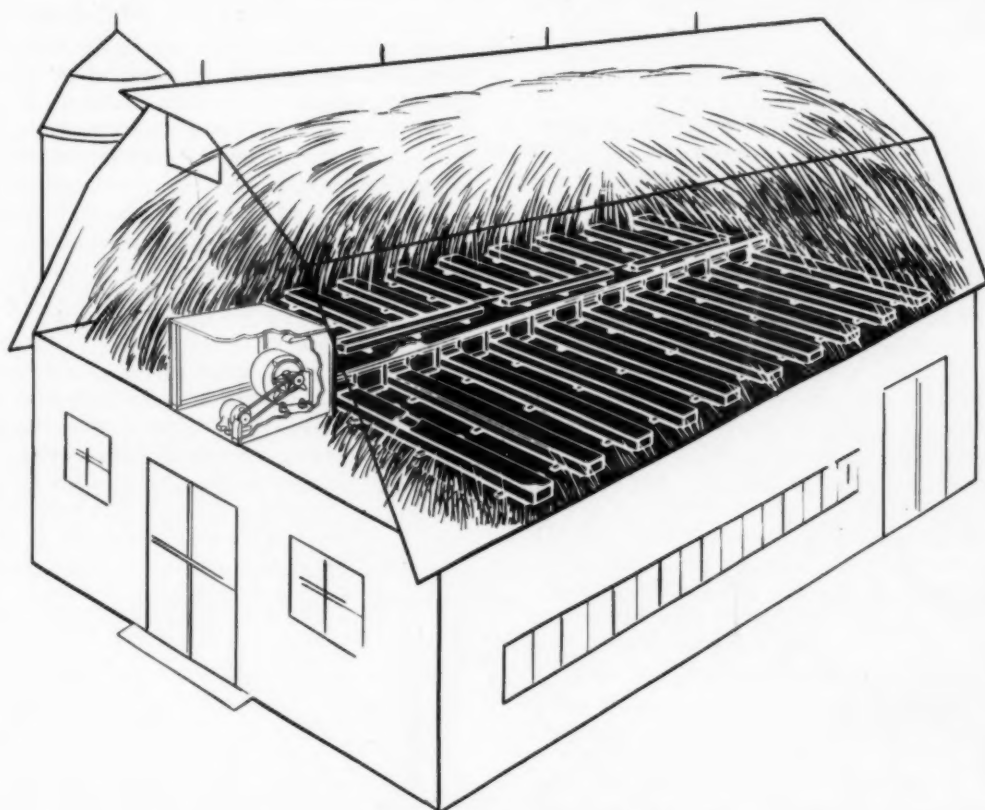
tion of the equipment or idea.

Many sheet metal shop owners plan such changes on paper with detailed sketches of the changes in operation of their business. This has always been a wise step for any such planning. While it is much better than proceeding on a hit-or-miss basis, it does lack visualization of how such changes will look when completed.

A midwestern firm has solved this problem through use of the model layout shown in the accompanying illustration. It consists of an ordinary flat piece of plywood board which serves to represent the firm's layout. Several wooden blocks, cut to various sizes, represent units of equipment. These are moved about to study closely the actual operational technique of changes and their flexibility allows improvements even after changes have been instituted.

The board and blocks have proven an invaluable aid in operation of this firm's business and are kept on the owner's desk at all times. Many changes in flow of work, installation of equipment, etc., that suggest themselves from time to time are worked out first on the model layout. It is also used when discussing equipment or operational changes with salesmen and factory representatives. In the words of this plant manager it has "proven to be about the best thing we have ever worked up to improve the operation of our business."





Correct Practice in Farm Ventilation

Barn Hay-Drying

L. E. PETERSON

ILG Electric Ventilating Co.

THROUGH modern developments in hay-drying methods, pioneered by agricultural engineers of the Tennessee Valley Authority in cooperation with Land Grant Colleges, it is now possible to feed and sell higher grade hay, without the hazards of field-drying.

Instead of completely curing hay in the field before storing it in the mow, with all the dangers of damage from dew, rain and excessive sun bleaching, it can be partially cured in the field for a few hours, then the drying completed by forcing air through the hay, after it is stored in the mow.

Better Quality of Hay

Using this new, yet proved practice, hay is cut in the morning as soon as the dew is off, then allowed

to dry four to five hours in the swath and in windrows, retaining the advantages of rapid curing in the field for the first few hours. This usually reduces moisture content of the hay from its original 75 per cent to about 45 per cent, while retaining the leaves, green color, nutrients and aroma. It is then transferred to the mow using standard hay handling equipment and distributed evenly over the duct system which is built onto the floor of the mow.

Operation of the mechanical hay-drying system over a period of from 7 to 14 days reduces the moisture down to a satisfactory storage content of 20 per cent. The hay is safe from the damage incident to unfavorable weather conditions . . . it is leafy, retains most of its green color, has high feeding value and is rated

one or two grades better than the same hay dried in the field. Naturally, to derive these benefits it is understood that the raw material is high quality legume hay—no method can make good hay out of a poor quality, weedy crop.

Costs Are Low

Based upon mow area covered, the costs of mechanical hay-drying systems have varied from 20c to 30c per sq ft, depending on how much of the labor and lumber is furnished directly from the farm. These cost figures include the centrifugal fan (blower), belts, pulleys, electric wiring materials, lumber for ducts and one-fourth value of the motor or engine (which can be used for other farm jobs, so its total cost should not be allocated solely to the hay-drying system). The cost of operation varies with the amount of hay dried, the moisture content of the hay and the amount of moisture in the air during the drying period. Based on figures secured from a number of applications, the average power consumption by the motor has run from

40 kwh to 50 kwh per dry ton. Hay handling costs remain the same, or are slightly less than those of field-dried hay.

Any Barn Can Be Equipped

All typical sizes of barns can be equipped with mechanical hay-drying systems. The floor should be made air-tight to prevent leakage of air. The roof should be soundly constructed and waterproof. Free escape for the air from the system should be provided, either by leaving hay intake doors, open at both ends of the mow, or by making openings of equivalent size if these are no doors. Or an exhaust fan may be used to advantage to obtain positive results.

Any Barn Can Be Equipped

A minimum of 15 cubic feet of air per minute is required for each square foot of mow area. For example, a 30 by 50 ft mow totaling 1500 sq ft would require approximately 22,500 cfm. This required capacity is the basis for determining size of centrifugal fan needed.

The resistance to the air flow created by the duct

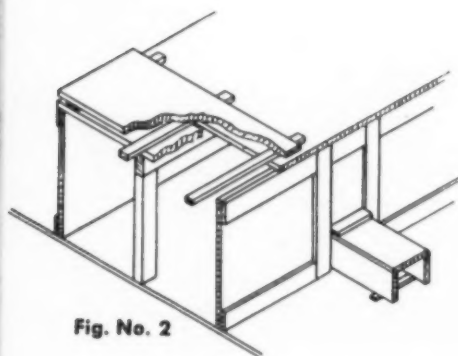


Fig. No. 2

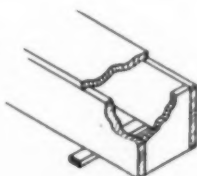


Fig. No. 4

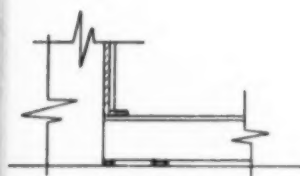
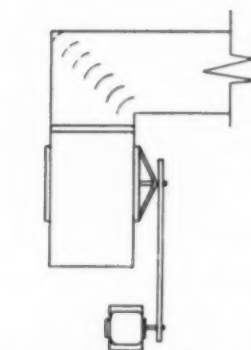


Fig. No. 3



ALTERNATE FAN-DUCT
ARRANGEMENT
Fig. No. 7

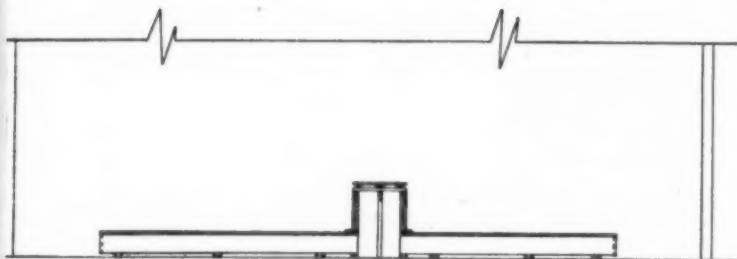
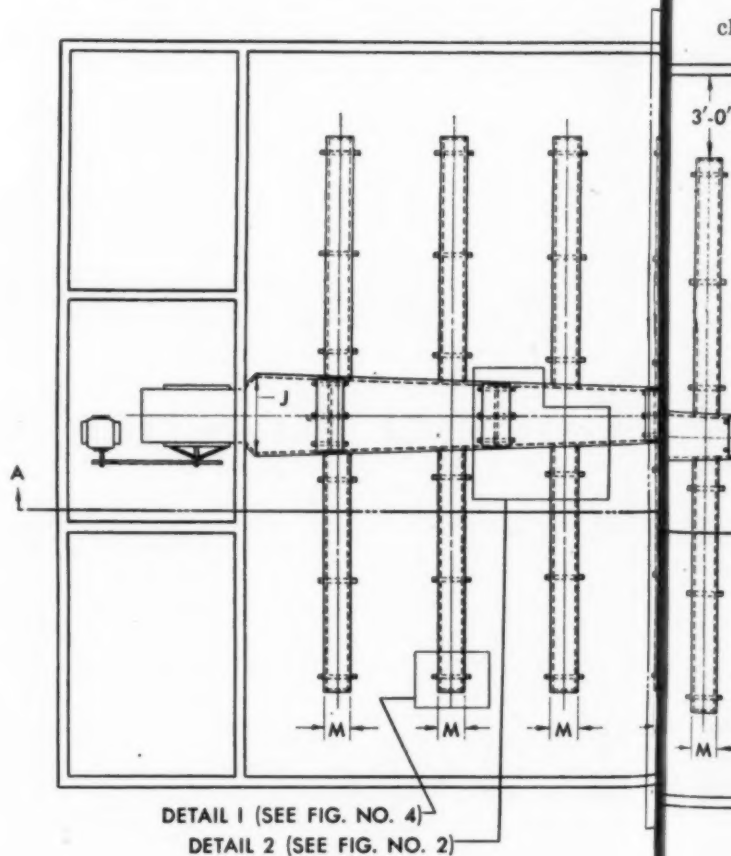
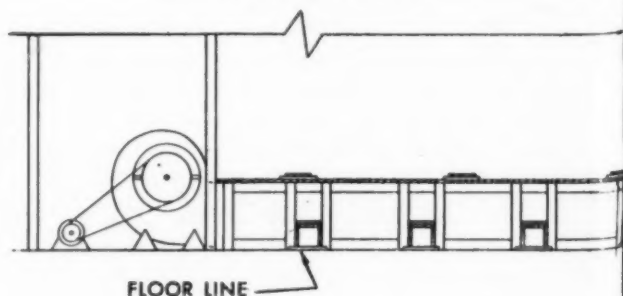


Fig. No. 5



DETAIL I (SEE FIG. NO. 4)
DETAIL 2 (SEE FIG. NO. 2)



FLOOR LINE

work and long hay will be about $\frac{3}{4}$ inch water gage static pressure. Where local conditions or the nature of the hay or other produce to be dried requires it, the system can be installed on the basis of 20 cfm, 25 cfm, or more. The following recommendations are based on practices which have been developed to meet varying conditions: For long hay curing in the South, 10 to 25 cfm and $\frac{1}{2}$ to 1 inch static pressure for 3 ft to 12 ft hay depth. In the North, 15 to 30 cfm and $\frac{1}{2}$ to 1 $\frac{1}{2}$ inch static pressure for up to 25 ft hay depth. For chopped and baled hay, 15 to 50 cfm per sq ft and $\frac{1}{2}$ to 3 inch static pressure for up to 16 ft of chopped hay.

Fans Suitable for Barn Hay Drying

Blowers with backward curved blades are particularly well suited to hay drying because this type makes it possible to obtain the maximum air capacity available from the full horsepower of the motor without any risk of overloading and burning out the motor when the static pressure or resistance to the air flow varies with the height and density of the hay in the mow. No dampers or any other manual or electrical control are needed to provide this extra protection.

Since a barn hay drying system can be used with changes for other drying jobs on the farm involving

varying pressures this non-overloading feature is a valuable one. Moreover, this type of blower has a superior ability to work against the relatively high pressures encountered in drying chopped and baled hay, rice, and other dense materials. Where heat is employed in the drying process as in the South it is an easy matter to connect the warm air duct to the single inlet fan.

Design and Construction of the Duct System

The air distribution system consists of a main duct which leads to a series of branch or side ducts as shown in Fig No. 1. Any available lumber can be used for their construction. They should be sturdily made of one inch lumber to support the weight of the hay and reinforced every two feet with studs. On the main duct these studs can be 2 inch x 4 inch. On the side ducts 2 inch x 2 inch studs will be sufficient. The studs should be constructed on the outside of the duct so that they will not interfere with the air flow within the duct. (See Fig No. 2.) Each side duct should be mounted on 1 inch x 2 inch boards running across the bottom of each duct at each stud. Since these ducts consist only of two sides and a top and are left open on the bottom, these 1 inch boards lift the duct up to maintain a 1 inch opening at the floor line the entire length of the duct. (See Fig No. 4.)

These side ducts are not fastened to the floor but are movable so that the floor may be cleared for easier handling of the hay lying around them when the rest of the hay has been removed. The open end of each side duct is inserted in the opening in the main duct. A 2 inch x 2 inch stud should be mounted the same distance from the open end of each side duct as the thickness of the main duct boards. This acts as a collar and prevents insertion of the side duct past that point, maintaining a flush surface inside the main duct.

The opening in the sides of the main ducts should be just large enough to accommodate the insertion of the side duct. (See Fig No. 3.)

The basic design for a duct system for a typical barn of any size can be determined from Fig 1. The side ducts are always of a uniform size regardless of their length. They should run from the main duct to within three feet of the edge of the hay. Side ducts should be 4 feet apart on centers. Thus for longer or wider mows the number and length of the side ducts are increased.

The main duct consists of the two sides and top and is mounted directly on the floor without any spacers. The width should taper uniformly from the large, or fan end to the small, or far end. The height can remain constant for ease in construction.

A 1 inch slot the width of the main duct should be cut in the top at four foot intervals. Over each of these a 10 inch wide board mounted on a 1 inch spacer should be placed to prevent blocking of these openings, to permit the drying of the hay lying immediately above the main duct. (See Fig No. 5 and 6.)

The position of the fan depends upon the space available for it. It may be located at the end of the main duct blowing directly into its length (see Fig No. 6) or it may be located at one side of the barn connecting to the main duct by a duct of the same maximum size. At the turn a number of smooth bends or air splitters of sheet metal should be placed in the duct

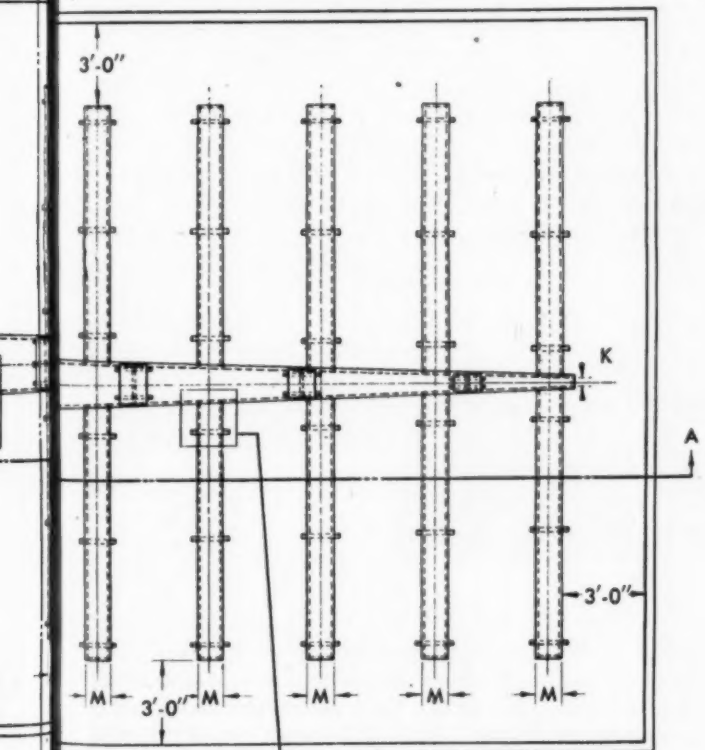


Fig. No. 1

DETAIL 3 (SEE FIG. NO. 3)

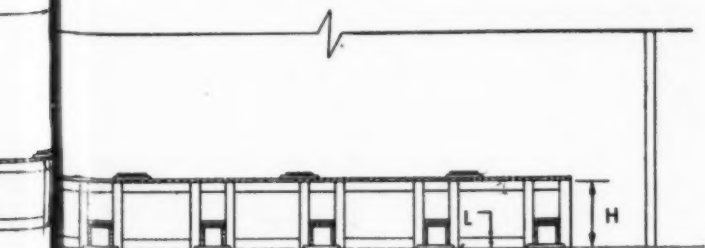


Fig. No. 6



Chopped hay being put in storage.

A typical barn installation.



to permit the air to move smoothly around the right angle turn. (See Fig No. 7.)

Placing the Hay in the Mow

Since the air tends to flow where there is the least resistance, the hay should be spread to a uniform depth in the mow for uniform drying. The fan may be operated as soon as there is a layer of hay over the ducts. Where the hay is nearly dry enough to store by ordinary haying methods, it can be brought in as fast as desired. Where it contains more than 40 per cent moisture however, and is tough, it is usually best not to fill the mow to a depth of more than 8 ft until the hay in the mow is nearly dry. Drying time varies from one to three weeks depending on the amount of moisture in the hay and in the air.

When to Operate the Fan

It is usually best to operate the fan all the time night and day while drying the hay. A red pilot signal light connected into the circuit to light when the motor is running should be mounted in a conspicuous place on the exterior of the barn as a reminder to keep the system in operation.

Maximum Weight of Hay

Because eight feet of hay containing 50 per cent moisture is equal in weight to that of twenty feet of dry hay the load on the mow floor must be taken into consideration. After eight feet of hay are dried another eight feet can be added. Make any provisions that may be necessary to insure the ability of the floor to carry the weight.

Chopped Hay Drying

Chopped hay can be as satisfactorily barn cured as long hay, using the system outlined. However, because it packs more solidly in the mow it is usually best to dry not more than six to eight feet in depth at a time.

Strength of Houses

WITH THE MANY ADVANCEMENTS in design and use of materials that have taken place in the field of architecture, one of the most incongruous facts is that there has been no modern attempt to determine just how strong a house should be to fulfil its function.

The National Bureau of Standards has initiated research into this matter from the standpoint of conserving material, if more was being used in construction than engineering principles would prove necessary. This approach to the material and procedural aspect of construction, using sound engineering principles, makes possible the adoption of unconventional techniques and building products by proving their ability to perform.

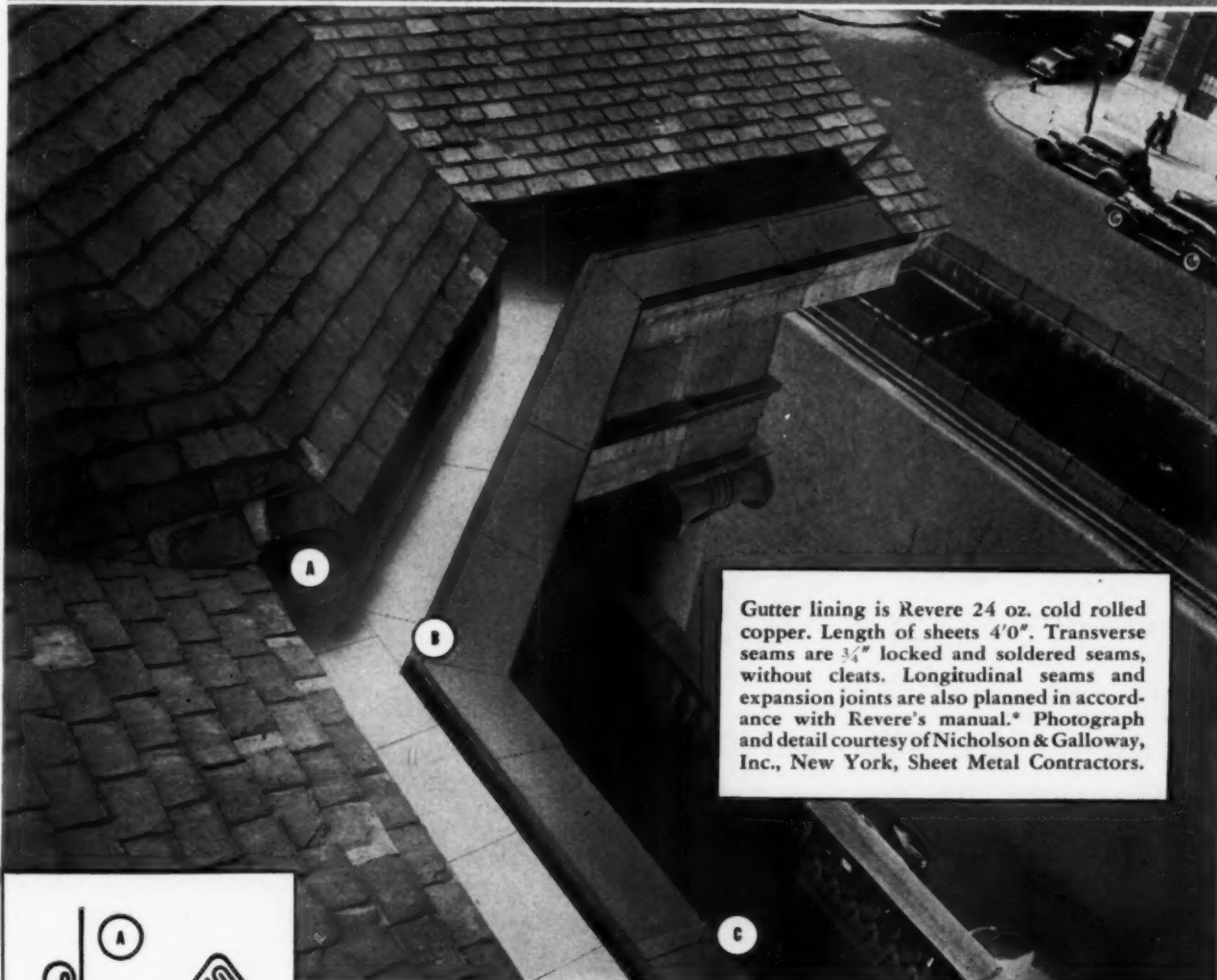
In the past it has been customary to build houses that were patterned after houses that had proven their

ability to withstand the elements by doing just that for many years. This has resulted in a situation that could be compared to the Ford Motor Company continuing to make the Model T because nobody could wear one out. Advancement in techniques were immediately open to question because the use of traditional methods had resulted in building codes that recognized only those traditional methods.

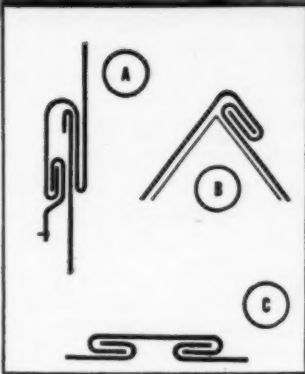
Building material is costly and so is the labor required to shape it and place it. By applying engineering principles to house construction it becomes possible to design a building which has sufficient strength and yet requires the least amount of material and labor.

Suggested methods in house design applying engineering principles have been published in BMS 109, *Strength of the Houses*, available from the Government Printing Office in Washington, \$1.50 a copy.

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Gutter lining is Revere 24 oz. cold rolled copper. Length of sheets 4'0". Transverse seams are $\frac{3}{4}$ " locked and soldered seams, without cleats. Longitudinal seams and expansion joints are also planned in accordance with Revere's manual.* Photograph and detail courtesy of Nicholson & Galloway, Inc., New York, Sheet Metal Contractors.



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This research has clearly proved that control of three fundamental factors will insure long-service copper installations. They are (1) weight and temper of the copper, (2) design and distribution of expansion joints and (3) strength of transverse joints. Observance of only one or two of these factors may lead to premature stress failures. When all three are controlled maximum length of service is assured.

The findings of this study have been compiled into a 96-page booklet.* It is complete with charts and

detailed information so arranged that you can read and apply final figures that insure the finest sheet copper construction.

This book has been widely distributed to architects and sheet metal contractors, and in all probability is in your office files. Be sure to refer to it. If you do not have a copy, write for one now on your office letterhead. If you wish further information, the Revere Technical Advisory Service, Architectural will be glad to help you.

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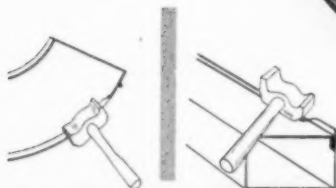


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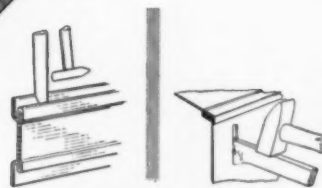


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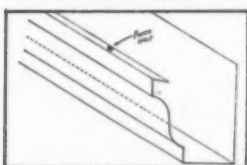
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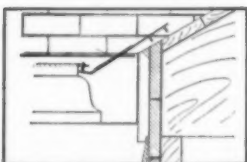
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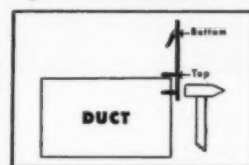
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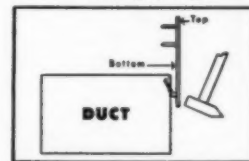
SIMPLE AS "A, B, C"
TO USE ON ALL
TYPES OF DUCT
MATERIAL



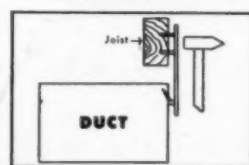
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National Apprenticeship Award

THE Ventilating & Air Conditioning Contractors' Association of Chicago is sponsoring a sheet metal apprenticeship national award. They have established an annual award for superior apprentice training throughout the industry. Their announcement follows:

"Both the Joint Apprentice Training Committee and the individual apprentice participate in the award.

"The grading of the quality of work done by the Joint Apprentice Committee is based on the skill and judgment of the committee in selecting apprentices for training; the progress the committee makes in 'selling' apprenticeship to the employers, the general over-all contribution to apprentice training by the committee and the skills acquired by the apprentices under its jurisdiction.

"The committee need not be an exclusively sheet metal employer-sheet metal union joint committee although this is the only type of joint committee now organized.

"Any apprentice committee organized and operated jointly between employers and a building trades council in a community where the number of employees or journeymen in any one trade would not stimulate interest in specialized apprentice training may qualify for the award. Such committees should include a 'public' representative, preferably one nominated by a local service organization such as the Chamber of Commerce, Rotary or Kiwanis Clubs.

BRONZE TROPHY AWARD

"Based on the findings of the National Award Committee of the Ventilating and Air Conditioning Contractors' Association of Chicago, the winning Joint Apprenticeship Committee will be awarded the Association's Bronze Trophy for a period of one year. The Trophy will be engraved with the current and previous winners and at the end of the year will be relinquished to the winner of the next year's award.

INDIVIDUAL PRIZES

"The individual apprentice awards are based on the performance of any regularly indentured apprentice whose second year training is principally within the calendar year of the award.

"The individual apprentice award will be based on a piece of work entirely laid out, formed and assembled by the apprentice. Specifications and a drawing of this piece of work will be furnished to the individual apprentice upon his request and statement that he in-

tends to try for the award made to the Association National Award Committee.

"Three annual cash prizes will be made to individual apprentices—\$100.00 first prize, \$75.00 second prize, and \$50.00 third prize.

"The National Award Committee has a remarkably accurate and fair means of judging the workmanship of the second year apprentices eligible under this national award plan.

"All correspondence should be addressed to the National Apprenticeship Award Committee, Ventilating & Air Conditioning Contractors' Association of Chicago, Room 1120, 228 North La Salle Street, Chicago 1, Illinois.

"The Chicago Joint Apprenticeship Committee is not eligible for the Trophy award. Chicago apprentices will participate in an individual award of their own and will not participate in the National Award prizes."
—L. W. Rogers, Executive Secretary.

COMING EVENTS

June 20-24—American Society of Heating and Ventilating Engineers. Spring Meeting. Mt. Washington Hotel, Bretton Woods, N. H.

June 28—National Heating Wholesalers Association. Mid-Year Convention. Edgewater Beach Hotel, Chicago. Richard M. Colegrove, Exec. Secy., 2130 Keith Bldg., Cleveland 15, Ohio.

June 29-30—National Warm Air Heating & Air Conditioning Association. Mid-Year Meeting. Edgewater Beach Hotel, Chicago. Geo. Boedener, Man. Dir., 145 Public Square, Cleveland 14, Ohio.

Sept. 13-17—Instrument Society of America. 1117 Wolfendale St., Pittsburgh 12. Third National Instrument Conference and Exhibit. Convention Hall, Philadelphia.

Oct. 4-9—American Gas Association. 1948 Convention. Technical Section—Ambassador Hotel; Residential Gas, Industrial and Commercial Section—Ritz-Carlton Hotel; Accounting Section—Haddon Hall. Major T. J. Strickler, Chairman, Convention Committee, c/o The Gas Service Co., Kansas City.

Oct. 13-16—National Association of Housing Officials. 1313 E. 60th St., Chicago 37. 15th Annual and 3rd Exhibit. Olympic Hotel, Seattle.

NATIONAL ASSOCIATION OF SHEET METAL DISTRIBUTORS



John Speck, President

The sheet metal distributor is an important factor in our industry and a report of the proceedings of this spring meeting is here presented. Some of the problems that are faced by the distributor are similar to those confronting the contractor. The steel shortage is a universal problem.

THE Thirty-Eighth Spring Meeting of the National Association of Sheet Metal Distributors convened at the Deshler-Wallick hotel in Columbus, Ohio on Monday, May 23rd. With the continuing shortage of sheet steel the meeting was an important one by reason of the vital subjects that were on the agenda. The present trend in wage costs and other operating expenses has made it necessary for all phases of business operation to be surveyed for possible savings to maintain a decent profit margin. Thus, when the program for the meeting was devised the subjects of materials handling, correct warehousing procedure and use of mechanical equipment were included as well as discussions of the latest developments in use of metals and metal supplies.

After a greeting by John Speck, president of the Association, the convention heard the report of Thomas Fernley, Jr., executive secretary. He told the members of the progress made in the various activities carried on by the Association and with the steel supply situation in the state it is, one of the most important things he had to report on was the meeting with the Office of Industry Cooperation that took place in Washington, late in April. Result of the meeting was the formation of an Advisory Committee, in cooperation with the National Wholesale Hardware Association, to cover merchant trade products, galvanized sheets, and pipe.

Stainless Steel Developments

George W. Hinkle, Republic Steel Corporation, gave a well-organized discussion of the recent technical developments in stainless steel and the increasing demand which these developments have contributed to. In order to give a clearer understanding of his subject, Mr. Hinkle started with basic fundamentals and gave the reason that stainless steel is known by that name and explained the chemical reaction that sets up the film on the surface of this type of steel which gives it its characteristic sheen. The various types of stainless steel were described, according to alloy composition, and their uses enumerated.

Many helpful hints were given about fabrication, deep drawing and machining of stainless steel as well as some tips about finishing and cleaning of the finished product.

Materials Handling—Warehousing

Claude Riemenschneider, Chicago Tramrail Company, spoke on the advantages of mechanized handling equipment in the sheet metal industry. Very wisely he started by recommending a study of the problems involved in the particular operation before any decision be made regarding the type of handling equipment

to be purchased. He emphasized the fact that the physical characteristics of the plant had a great deal of bearing on the success of any type of handling equipment. He then brought out the performance features of the fork truck and overhead crane equipment. His principal point was that each type of handling device had certain advantages and certain disadvantages and that every individual plant was an individual problem and merited study as such.

Roger Becker, Ohio Valley Hardware & Roofing Co., personalized the problem of mechanized handling of material by speaking of the experiences of his own organization in that regard. Using slides to illustrate the points that he wished to make, Mr. Becker analyzed the problem that his company faced and the manner in which all features of the buildings used and the storage methods in vogue entered into the decision on the use of fork trucks as the most effective way of handling material. His thorough explanation gave the cost calculations that supported the use of fork trucks for their operation. A practice that goes hand in glove with the use of fork trucks, palletization, was also put into effect at Ohio Valley. With a standard size of pallet in use and as many items palletized as possible, the fork truck has resulted in considerable savings in handling time and expense.

Metals—Aluminum and Copper

Next speaker was C. S. French, Permanente Products Co., who gave an excellent discourse on the growth in demand for aluminum and aluminum products and looked into the future uses for the light metal. One of his most telling points was his statement that "Aluminum is not living on borrowed time because of the relative steel shortage." In most discussions of metal availability it is usually presumed that when ample steel is available the demand for aluminum will decrease to a marked extent. Yet this is not entirely true.

J. W. Stoner, American Brass Co., reaffirmed the belief of the copper producers in the present system of marketing their products through the distributor and then went on to speak of present and future demand for copper in the building industry. He brought out the fact that the European Recovery Plan will probably be felt in the supply of copper available but expressed the hope that 1948 would be a year of full supply to the construction industry.

Other papers were presented at the meeting that dealt with procedural problems of the distributor, collections, office procedure, public relations, compensation of salesmen and like topics.

SHEET METAL CONTRACTORS' NATIONAL ASSOCIATION

Discussions on topics covering the range of interests in the sheet metal industry marked the 1948 annual convention of the Sheet Metal Contractors National Association held in Hotel Cleveland, Cleveland, Ohio, May 3-5. After calling the first session to order, President Richard E. Walsh of St. Paul introduced Chairman Milton A. Thesmacher of the Convention Committee who welcomed the contractors to the Forest City.

President's Report

In his Presidential Address Mr. Walsh deplored the association's loss in the passing of Harvey L. Orton of Barberton, member of the Board of Directors and chairman of the Membership Committee.

To Clarence J. Meyer of Buffalo, the president gave full credit for his efforts in keeping interest in the national association during the difficult war years.

Accounting for his stewardship of the association's chief office, Mr. Walsh called attention to the mass of work placed upon the officers since the passage of the Labor Management Relations Act. When the executive secretary's office was opened at Elgin, Illinois, the construction industry was at sea with respect to the effects from this new legislation which became effective last August. He stated it will be necessary for the association to keep abreast with all legal developments of this new law.

Treasurer C. M. Gundlach of Sandusky reported the year's dues as slightly less than the preceding year. He urged all who are able to contribute to a special fund created for special activities that the association is called upon to engage in.

Executive Secretary Joseph D. Wilder summarized activities since the creation of his office. He stated that the association is a national clearing house for problems, questions, and answers, for the indus-

try throughout the 48 states. Under the national program there is no conflict with local and state associations and in the future, local units will be more necessary than in the past. Changes in labor relations will require local associations for mutual protection and advancement. He said many local associations ceased to function during the war or meet only on occasion when a problem arises.

Since some states do not have enough contractors to form associations, Mr. Wilder suggested they could form area groups in which problems would be uniform to each.

Sheet metal men, he said, are probably the most poorly organized in the construction industry. They are at a distinct disadvantage because all other units in the industry are organized.

When labor relations subside, Mr. Wilder expressed the hope that the programs of the association can go forward because these are of general interest.

Membership

He recommended that his listeners acquaint other contractors with the activities of the committees and bulletins available to the membership. The officers have found it impossible to reach contractors located in small communities, although the national office has attempted to do this by mail. He appealed for assistance by the members in building the membership because this cannot be done solely by mail.

Reporting for the Warm Air Heating Committee, W. J. Keist of Pittsburgh, chairman, spoke of the warm air heating activities. He said the association is mindful of the fact that to some, the sheet metal industry means warm air heating. Many contractors do nothing but warm air heating, while a still larger section of the industry does both sheet metal work and warm air heating, combined in varying

proportions. More than half of the officers are warm air heating contractors and more than half of the association's committee activities center around warm air heating.

Summarizing some of the committee's program, Mr. Keist said:

"The committee has found that current workmen's compensation rates for heating contractors are too high in many areas and, in addition, too often are lumped with more hazardous trades. This causes a higher rate than is warranted by the accident experience prevailing in warm air heating. Some states, such as New York, have as many as 200 classifications, resulting in fair rates for all crafts. Other states have only one or several rates which not only include the mechanic, but also salesmen and inside shop men who never go out on the job.

"The secretary's office is making a survey to establish rates and classifications prevailing in as many areas as possible. The survey should determine if lower rates for furnace work are possible."

Recognizing the importance of incentive plans to stabilize installation costs, Mr. Keist referred to a special association report available to the membership dealing with incentive plans.

The speaker outlined a plan initiated by a heating contractor in New York which combines the trades required to complete a heating installation.

Training Program

"The program does not intend," he said, "to train a man to be an all around sheet metal mechanic. In fact, the program includes a minimum of instruction on general sheet metal work.

"The program does, however, train a man to install and service gravity furnaces, winter air conditioning units, oil burners, gas-fired equipment, and controls and handle all types of service work. Three

1948 Officers

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W. A. Wiedenmann, Kansas City.....	Second Vice President
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C. M. Gundlach, Sandusky.....	Treasurer
Joseph D. Wilder, Elgin.....	Executive Secretary

Directors

Term ending 1949: A. J. Sabathne, Altoona
Term ending 1950: M. J. Cutter, Cleveland
Term ending 1951: W. A. Dennis, Decatur—James Goff, Dallas
A. J. Dalton, Detroit—John J. Yaeger, Buffalo

years of shop and on-the-job instruction is included and, in addition, supplemental classroom instruction in blueprint reading, mathematics, design, and necessary instruction in materials, machines, and processes used in warm air heating work."

Mr. Keist concluded his report by inviting suggestions of problems for the committee to study.

Admonishing the members to be ever-mindful of the necessity to bid on all work awarded in the past to the sheet metal industry, E. B. Brown, Jr., of Chicago, chairman of the Trade Relations Committee, announced that the General Counsel of the National Labor Relations Board has suggested that jurisdictional disputes in the construction industry be decided upon the basis of past history of the trades involved.

In order to acquaint members with the work awarded to the sheet metal industry in the past, he announced the early mailing of a booklet of jurisdictional decisions. He suggested that members study and bid on the work classified under the sheet metal trade.

Narowetz Speaks

Mr. Brown introduced Louis L. Narowetz of Chicago, honorary chairman of the Labor Relations Committee, who discussed the concern in the aluminum industry about the permanence of aluminum sheets for ductwork. To confirm the permanence of the use of aluminum, Mr. Narowetz suggested that those who wish to see the supply of aluminum sheets continue should write the executive secretary's office for details.

Contributing further to Mr. Brown's trade relations report, Mr. Narowetz presented the following discussion:

"It will be beneficial for all of us to review past procedure regarding jurisdictional problems and to consider the prospects for improvement in the construction industry.

"One of the most fundamental and important phases in our trade relations is the impact of labor's jurisdiction governing the work our shops can produce and the right of sheet metal workers to install in the field. We all know that the American Federation of Labor has a Building Trades Department by which the sheet metal worker is franchised to handle 10 gauge metal and lighter, including all labor in the manufacture, fabrication, assembly, and erection thereof. All metals now in use and any others developed in the future are included. This is a broad franchise and if it were all still within our scope we could be very satisfied with our opportunity in the sheet metal field.

"Unfortunately for management, as well as for the sheet metal worker himself, the passing of time has narrowed the scope of our work. For example, progress has developed seamless tubing to replace hand-made copper brazed piping. Other building materials, such as terra cotta used for cornices instead of sheet copper or other metal, have replaced our products. These are natural changes and they occur in every trade.

"In my travels, I have been shocked to see the limitations placed upon our trade in various cities. It is hard for me to realize that our contractors in some areas do not contract for the components of ventilating and air conditioning systems, such items as fans, air washers, air filters, ventilating units, radiator enclosures, grilles, air outlets, collectors, duct covering, etc. Yet they are obliged to

take the responsibilities of installation and adjustment of units.

"In my opinion, this deplorable condition in our industry is due to lack of cooperation between labor and management. Honest effort to respect the rights of sheet metal workers by both parties is the logical way to rectify this restriction of our natural opportunity. I believe that with the growth of our national association and the broadening of its activities in cooperation with labor's representatives, we can look forward to a better understanding of the rights and privileges given to us through labor's charter. Only through a national association can we acquaint our membership with the progress made in one area and the possible retrogression in another.

Sell Component Parts

"There is no reason why a general or other contractor should purchase any one of the above mentioned components of a ventilating system or other branch of sheet metal work. When our contractors subscribe to this practice, they are resigning themselves, in effect, to hard labor and poor returns. I hold no brief for labor's representatives who live with this kind of situation. I expect our national association, through its Trade Relations Committee, to lift the morale of some of our members so they may become contractors in a true sense. In the purchase of components we have control of their erection, thereby making it easier for our labor to hold its jurisdiction.

"This brings me to the main topic, the new jurisdictional board for settlement of trade disputes. With the enactment of the Labor Management Relations Act, the President directed the National Labor Relations Board through R. N. Denham, its counsel, to set up machinery to remove the impediments to natural and free exercise of each trade's charter in the building construction industry. After many meetings, labor and management have subscribed to a joint board, directed by trustees, to examine jurisdictional disputes.

"Patterned in many respects after the Joint Conference Board of the Building Construction Employers Association of Chicago and the

Building and Construction Trades Council of Chicago and Cook County, the joint board for the settlement of jurisdictional disputes, established through authority of NLRB, is now ready to function. It will be known as the National Joint Board for the Settlement of Jurisdictional Disputes in the building and construction industry. Its formation has been ratified by the Associated General Contractors of America, seven national associations of specialty contractors and the Building and Construction Trades Department of the American Federation of Labor.

New Procedure

"Under the new procedure, unsettled local disputes, or appeals from local decisions, will be referred to the national board. The board will be composed of an impartial chairman, two labor members and two contractor members; a pool of 24 members representing labor and employers, to be available for arbitration proceedings, and a board of trustees, also with labor-management membership, which will receive notices of disputes, not settled locally, and determine if arbitration or other action is necessary or possible.

"Representing general contractors on the board of trustees will be Edward P. Palmer, president of Senior and Palmer, New York contractors, and James D. Marshall, assistant managing director of AGCA. Other representatives of the employers will be Paul M. Geary, executive vice-president of the National Electrical Contractors Association; and H. R. Cole, executive secretary of the Tile Contractors Association of America.

"The four representatives of the Building Trades Department, AFL, will be Richard J. Gray, department president; James W. Close, general secretary of the Sheet Metal Workers International Association; William O'Neil, general representative of the United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry, and M. A. Hutcheson, first vice-president of the United Brotherhood of Carpenters and Joiners of America.

"The trustees have the duty of se-

lecting the impartial chairman of the board and the authority to establish appropriate procedural rules and administrative practices to guide the operation of the dispute settlement program.

"Both labor and management agreed upon the selection of Professor Dunlop of Harvard University as impartial chairman of the board, which will have two management representatives and two labor representatives as judges of each dispute.

"The pool is composed of twelve contractors and twelve national labor leaders. There are three men representing general contractors and nine men who represent the sub-contractor trades.

"It has been agreed that labor and management will share equally to the amount of \$10,000 toward the \$20,000 per year allowed to maintain headquarters in Washington, D. C., covering Professor Dunlop's salary and other office expenses. The general contractors pay 50 per cent of management's share, leaving 50 per cent divided among the nine sub-trades, or about \$600 per year for each of them.

National Decisions

"When decisions are rendered, they become national in scope and will supersede the spot decisions made by joint conference boards as operated heretofore in Boston, New York, Washington and Chicago. It is expected that among other disputes the particularly obnoxious ventilating unit situation, which is kept in constant turmoil by the pipe trades, will be cleared up through the functioning of this board. I believe, in view of present-day controversy between our trade and the pipe trades, we are fortunate in being active participants on this panel.

"After my name was submitted to the Building Trades Department, President Richard E. Walsh appointed me to represent our industry on this board. Several weeks ago I visited Washington, qualified with the board, and signed the board agreement. Hearings are expected to be held in June."

Close to 100 ladies were registered to enjoy the program arranged by the Ladies' Convention Committee, chairmanned by Mrs.

A. A. Franck of Cleveland. In appreciation for her efforts in planning a program of entertaining activity, Executive Secretary Joseph D. Wilder presented Mrs. Franck with a token of remembrance during the annual banquet festivities.

Apprentice Committee

Continuing the parade of committee reports, Chairman Frank Kramer of Milwaukee, speaking for the Apprentice Training Committee, said the objective of his committee's program was to create a supply of newly trained employees that will be effective in the future when these men are needed.

Mr. Kramer said there are less than 8,000 under training in the United States—about 25 per cent below quota.

He asked for continued support of the association's apprentice training program.

Overhead Problem

The Bookkeeping Committee Chairman, C. F. Warning of Oshkosh, described the next objective in accounting: a survey of the best method to prorate overhead in the sheet metal business. He promised a future report on this important subject.

Tuesday morning was given over to a discussion of the activities of the Labor Relations Committee. Chairman Roy H. Dose of St. Paul spoke on many of the activities of this committee and reviewed the numerous bulletins that have been issued by the executive secretary's office.

Industry Forums

As in the past, the forums of each branch of the industry were generously attended and presented a wide variety of subjects for open discussion. The forums were chairmanned by the following: Warm Air Heating, W. J. Keist of Pittsburgh and Dee Cramer of Flint; Sheet Metal and Fabricating, W. A. Wiedenmann of Kansas City; and Roofing, Philip W. Olmen of Chicago.

After election of officers, approval of changes to the constitution and by-laws, and selection of Washington, D. C., as the 1949 convention city, President Walsh gavelled the meeting to adjournment.

Association Activities . . .

Florida

AT the annual convention of The Roofing & Sheet Metal Contractors' Association of Florida, held in Jacksonville on April 9 and 10, the following officers were elected for 1948-49:

J. M. Montgomery, President, Coral Gables; George Ferber, 1st Vice-President, Jacksonville; R. E. Moorhead, 2nd Vice-President, Lake Wales; A. C. Ferguson, 3rd Vice-President, Jacksonville; John C. Caldwell, Secretary-Treasurer, Orlando.

Directors are as follows:

C. R. Bergquest, District 5, Lakeland; Howard Carpenter, District 4, West Palm Beach; Mack Fillingham, District 1, Jacksonville; John A. Gross, District 4, West Palm Beach; Ellard Kohn, District 4, Miami; Otto Krauss Jr., District 5, St. Petersburg; O. J. Nettles, District 2, Tallahassee; Wm. N. Palmer, District 4, Miami; Frank Tack, District 5, Clearwater; J. A. Tucker, District 3, Ocala.

Ladies auxiliary officers are:

Mrs. J. M. Montgomery, President; Mrs. John C. Caldwell, Secretary; Mrs. Wm. N. Palmer, Convention Chairwoman.

A tribute is paid to the Jacksonville convention committee, Messrs. George Ferber, Mack Fillingham and A. C. Ferguson, for one of the best conventions ever.

Miami was chosen the 1949 convention city.

Twin Cities

THE Twin City Area Apprenticeship Committee for the Building Trades held a joint ceremonial on March 30th at Coffman Memorial Union, University of Minnesota, Minneapolis, to issue certificates to apprentices who had completed their training.

William F. Patterson, Washington, D. C., National Director, Bureau of Apprenticeship, United States Department of Labor, was one of the speakers who addressed the group of over 700 persons.

From the sheet metal craft there were forty-five graduates who had completed their apprenticeship since the war.

The Minneapolis Local Joint Sheet Metal Apprenticeship Committee had twenty graduating apprentices. This committee is composed of Secretary R. J. Krause, Chris Peterson, Leo Nees, and C. O. Carlson (alternate) of the Minneapolis Sheet Metal, Heating and Air Conditioning Association, and Chairman Roy Gagnon, Owen Munkholm, and Edward Hudoba of the Sheet Metal Workers International Association Local No. 34.

The St. Paul Local Joint Sheet Metal Apprenticeship Committee had twenty-five graduating apprentices. This committee is composed of Secretary Clyde Parriott, W. E. Meyers and H. R. Bostrom of the Roofing and Sheet Metal Contractors Association of St. Paul, Inc., and Chairman Joseph J. Bauer, LeRoy Johnson and Herman Kock of the Sheet Metal Workers International Association Local Union No. 76.

This apprenticeship program started in St. Paul twelve years ago—two years before the apprenticeship law was passed. The sheet metal committee now has

seventy apprentices in St. Paul taking the training, Minneapolis has about a hundred, and the State more than two hundred fifty—all now indentured under the National Standards as developed by a Joint Committee from the National Sheet Metal Contractors' Association and the International Sheet Metal Workers Union. This same standard has been adopted by the various interested agencies on a state-wide basis.

Agencies which have been of assistance to these committees are the Minnesota Apprenticeship Council of the State Industrial Commission, Apprenticeship Training Service of the United States Department of Labor, and the Minnesota State Department of Vocational Education.

The Miller Vocational School of Minneapolis, the St. Paul Vocational School, and the William Hood Dunwoody Industrial Institute of Minneapolis and their staff of instructors were pointed out for a fine job of related instruction well done.

The cooperation of the Vocational Rehabilitation and Education Division of the Veterans' Administration in administering benefits to returned veteran apprentices was mentioned.—H. R. Bostrom.

Dayton

THE Sheet Metal, Furnace & Roofing Contractors Association, Inc., meets monthly at the Dayton Builders Exchange, Room 215, Callahan Building. There are now 45 members from Dayton and Montgomery County.

At their annual election, the following officers were elected:

President E. D. Busch
Vice President Karl M. Gochoel
Secretary-Treasurer A. J. Hoke

President Busch succeeds Leo B. Budde.

Directors for a two-year term: William Fahrig and W. W. Barnes. Artie A. Smith, L. B. Budde and V. J. Wehner retain their position on the Board.

The association is working with the city in drafting an entirely new warm air heating code for both forced air and gravity heating. This measure will soon be ready to go before the City Commission for acceptance.

After two or more years of talk and argument pro and con, the organization finally settled on an association emblem.

Plans are being made for the annual family picnic to be held in mid-summer.—A. J. Hoke, Secy-Treas.

Harvey L. Orton 1883-1948

One of the best-known figures in the industry, Harvey L. Orton, died on the 19th of April. Funeral services were held in Wadsworth, Ohio on April 21st. Mr. Orton was 65 years of age.

A director of the Sheet Metal Contractors' National Association and former officer in his state association, Mr. Orton had many friends who will be saddened by his loss. His firm, Orton Heating Company is located in Barberton, Ohio.

EQUIPMENT DEVELOPMENTS

Evaporating Plates.....116

Monite vapor plates are ceramic plates, molded under high pressure, announced by the makers of Monmouth Flotrol and Micro-feed humidifiers. These newly designed

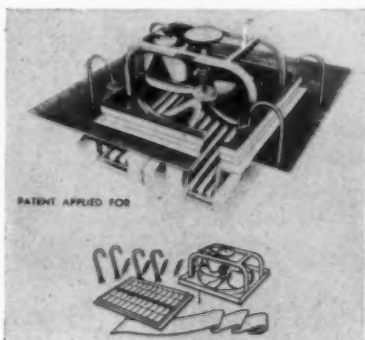


plates are easy to clean and are improved in durability and efficiency. Each gives evaporating capacity equal to 50 square inches of water surface.

Cleveland Humidifier Co., 7802 Wade Park Ave., Cleveland 3, Ohio.

Vertical Attic Fan.....117

A spring mounted, vertical air discharge attic ventilating fan, has been designated for attics of low headroom, and where quiet is desired. A package unit, consisting of vertical discharge fan and motor, automatic ceiling shutter, floor mounting brackets and springs, canvas boot for seal between fan and attic floor, pull chain switch



with fuse link, is available in three sizes—EV 30-in. fan delivers 6,000 cfm, the EV 36-in. fan delivers 8,500 cfm, and the EV 42-in. fan delivers 12,000 cfm.

Air delivery ratings are determined by the Standard Test Code of the Propeller Fan Manufacturers' Association and the ASH&VE.

Chelsea Fan & Blower Co., Inc., 1206 Grove St., Irvington, N. J.

Use the Coupon on This Page

All-Fuel Furnace.....118

A new square-cased, all-fuel, convertible heavy steel furnace has been added to the Airtemp line. This new furnace may be converted from hand-fired coal to oil, gas or stoker and is available in either gravity or forced-air type. The grates are easily removed or installed.

The furnace is built in 20, 22, 24 and 27-inch sizes. The furniture steel cabinet is modern and styled



with moulded panels and rounded corners. The furnace is crinkle finished in sand gray sides and ends, with base and top of moss green.

The blower compartment may be installed in either side of the cabinet, making the unit extremely flexible.

Airtemp Division, Chrysler Corporation, 119 Leo Street, Dayton 1, Ohio.

Acid-Core Solder.....119

Tri-Core Leakpruf acid-filled solder has been announced. The development of this hard acid flux offers the following advantages:



Ability to solder stainless steel, monel, nickel and other metals.

Three cores instead of one—with no premium in price.

The synthetic acid used is more active as a flux than the usual zinc chloride, yet only half as corrosive. It is readily soluble in water.

A definite soldering sequence is automatically developed by three cores of flux. Hence "cold solder joints" are practically eliminated. There is always the proper volume of flux at the moment the solder begins to flow. The three-core construction promotes faster melting.

Alpha Metals, Inc., 363 Hudson Ave., Brooklyn 1, N. Y.

MAIL THIS NOW!

We will ask the manufacturers to send full particulars about the products and literature mentioned.

Be sure to circle the items you want.

Equipment Developments

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Manufacturer ☐

Jobber ☐

Dealer ☐

Name.....

Company.....

Address.....

Address: AMERICAN ARTISAN, 6 North Michigan Ave., Chicago 2, Illinois

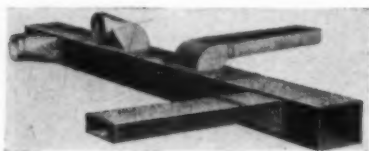
EQUIPMENT DEVELOPMENTS

Use the Coupon on Page 111

Ducts and Fittings.....120

The Lamneck Simplenic system of prefabricated aluminum duct and fittings for forced air heating systems is offered.

The new system will simplify stocking. The duct is the same size its full length, requiring no reducers



or increasers. The large end openings of the take-off fittings have twice the area of the outlets which assures maximum capacity of the system. To determine the size of the duct, multiply the required number of openings by two and add the number two. If there are nine openings of 6-, 7- and 8-in. round pipe branches, 9×2 equals 18 plus two equals 20 inches for width. The standard Simplenic duct is 8 inches deep, therefore the size would be 20 x 8 inches.

Clayton & Lambert Mfg. Co., 1701 Dixie Highway, Louisville 10, Ky.

Galvanizing.....121

A mechanized process of hot dip galvanizing to be used on steel shipping containers, as well as hot water tanks, is announced.

The sequence of operations first submerges the tank by conveyor in a hot sulphuric acid bath for the removal of scale and other impurities, with the time of immersion and the temperature and strength of the acid under constant check; second, the tank is conveyed through a rinse chamber; third, the tank is submerged in a hot solution of hydrochloric acid with the time, temperature and acid concentration under automatic control; fourth, the galvanizing kettle, where the tank passes through a blanket of flux with the time under automatic control; fifth, the cooling chamber for inspection; sixth, the tank is removed from the conveyor and

the bottom welded in place; and seventh, a final hydrostatic test subjecting the tank to an actual water pressure greatly in excess of the pressure it will receive in usage.

Rheem Manufacturing Company, 11 West 42nd Street, New York 18, N. Y.

A C Furnace.....122

The 70 oil-fired winter air conditioning furnace is completely assembled with blower, humidifier, casing and flanged-mounted oil burner. It is also available with gas burner. Four sizes are available:



70,000; 90,000; 155,000; and 200,000 Btuh output.

The unit is completely sealed to prevent cellar air from leaking in.

These furnaces leave the factory crated, ready for installation. They are easily connected to the stack and oil tank, then plugged in and started up.

Quiet Automatic Burner Corporation, 49 Bloomfield Avenue, Newark 4, N. J.

Roofing Sheet.....123

A new roofing sheet is soft in temper and lends itself to the various bending, forming, seaming and soldering operations required for roofing purposes.

The new sheet is available in standard roofing thicknesses and can be used for nearly all types of roof construction and is as adaptable to rural dwellings as to public and commercial buildings exposed to corrosive atmospheres and salt air. It is being used in skylight framework, penthouse sidings, throughwall flashings, cap and base flashings, gutters, cornices, and downspouts, as well as complete roofs.

The sheet, while easy to form, is tough and hard. It has a low coefficient of expansion, high rigidity, is not subject to fatigue-cracking, and remains unaffected by sudden temperature changes which normally affect most metallic roofing materials.

The International Nickel Company, Inc., 67 Wall Street, New York 5, N. Y.

Safety Pilot Burner.....124

New gas burner assemblies include, as standard equipment, both complete valve-type safety pilot and 100 per cent shut-off. These



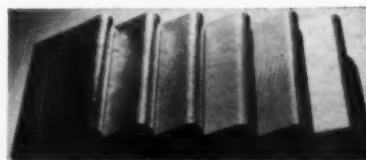
new burners conform with state laws where an absolute shut-off device is mandatory for all LP gas installations.

Barber Gas Burner Company, 3704 Superior Ave., Cleveland 14, Ohio.

Embossed Sheets.....125

A new form of aluminum sheet has raised patterns which eliminate the need for finishing operations, increases the rigidity, the surface hides wear and gives an attractive finish.

Matched roller-die embossing machines emboss decorative patterns



in the aluminum sheet at the mills.

Each of the embossed patterns add advantages peculiar to its own particular pattern.

Flat sheets range in thicknesses from a minimum of .010-in. to a maximum of .040-in. and in widths from a minimum of 12 to a maximum of 48 inches. Coiled sheet can be furnished in thicknesses between .010 and .040 in. and in widths ranging from 6 to 36 inches.

Reynolds Metals Co., 2500 S. Third St., Louisville, Ky.



Timer126

A timer that facilitates use of the Tempscribe Operation Recorder for adjusting fire size of oil burners or input rate of gas burners has been developed.

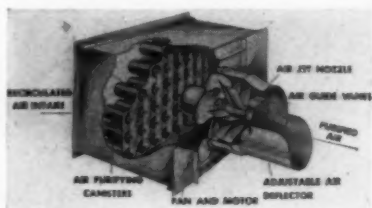
One wire from the timer is plugged into the lead from the Tempscribe Recorder. Another, provided with alligator clamps, is hooked across the control circuit of oil burner motor, gas valve, or stoker motor. The clock of the timer operates on 100 volt a-c current, and may be plugged into any standard outlet.

With this device it is possible to use the Tempscribe to record burner "on" time at night, after occupants have retired. After the record has been made for the interval preselected for the test, the timer automatically switches off the recorder.

Bacharach Industrial Instrument Co., 7000 Bennett St., Pittsburgh 8, Pa.

Air Purifier127

The Dorex Apple Storage Air Purification unit is built to specifications determined by tests conducted by the New York State Agricultural Experiment Station, Cornell University, and is designed to add four to six weeks to the storage life of



apples, control or reduce skin "scald," and generally preserve quality.

Operation is independent of the refrigeration machinery. The unit consists of a cabinet containing the purification element, activated carbon-filled canisters, and a fan and

motor to provide circulation. Air guide vanes straighten the air currents which are further channelled by a jet nozzle. An adjustable deflector makes it possible to divert the air in any required direction.

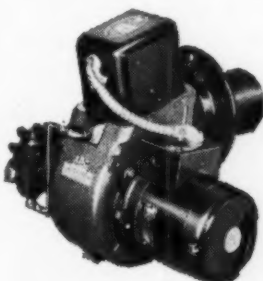
Capacities range from 5,000 to 20,000 bushels. The units may be mounted on the floor, wall or ceiling.

An illustrated folder "A Letter from a Smart Apple" gives the story.

W. B. Connor Engineering Corp., 114 E. 32nd St., New York 16, N. Y.

Gun-Type Burner128

Model 51 oil burner is a newly designed gun-type pressure atomizing burner with intermittent ignition, direct drive fuel pump, cast alumi-



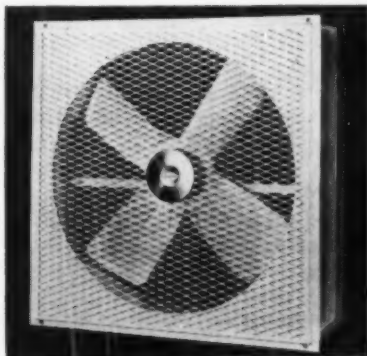
num housing and all steel air tube in 6, 8 or 11 in. lengths.

Underwriters' Laboratory list it as standard for fuel consumption of 0.6 to 2.5 gallons per hour.

Automatic Burner Corporation, 1823 W. Carroll Ave., Chicago 12, Ill., Dept. D.

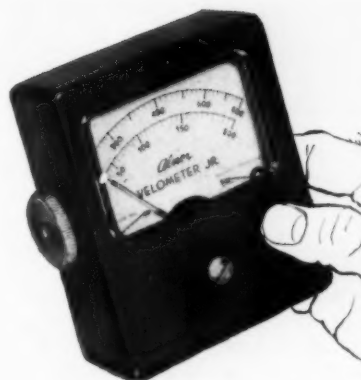
Air Mover129

A 30-inch air mover is powered by a 1/4 hp motor, has overall dimensions of 36 x 36 in., and an



attractive grille. Capacity is approximately 7,000 cfm.

V. E. Sprouse Company, Inc., Columbus, Indiana.



Miniature Velometer130

A miniature Alnor Velometer Jr., answers the need for a portable, low-priced, direct reading instrument.

This palm-sized Velometer Jr. was designed for heating, ventilating, air conditioning and refrigerating work not requiring the use of jet attachments. Completely self-contained, the Velometer Jr.—4 x 3 x 1 1/2 in.—weighs 8 ounces and has single or double velocity range scales.

Alnor Velometer Jr. is calibrated to provide direct reading of air velocity in either feet per minute or miles per hour without timing, calculations or reference to tables and charts.

Illinois Testing Laboratories, Inc., 420 N. LaSalle Street, Chicago 10, Illinois.

Solder Spool Cover131

A Snap-on metal cover for solder spools slips over the Divco one-pound solder spool and snaps into place. It protects the solder from dents, abrasions, and exposure to



the air, keeping it bright and clean much longer. The metal cover also prevents uncoiling and tangling when the solder is carried in a tool kit.

This cover is furnished on Divco one pound spools of acid core, rosin core, and solid wire solder in popular sizes and grades.

Division Lead Company, Dept. 119, 836 W. Kinzie St., Chicago 22, Ill.

EQUIPMENT DEVELOPMENTS

Use the Coupon on Page 111

Oil Burners 132

Two oil burner models—the DHP-1 and the DHP-10—have capacities of .75 to 1.35 gph and 6 to 10 gph respectively. A new combustion



head, without moving parts, will burn catalytic fuel oil at normal pressure and requires no adjustments.

Increased fire box temperatures of 300 to 500 deg. are common.

H. A. Howell Oil Burner Company, Dixon, Illinois.

Tool Kit 133

An all-purpose tool kit includes a new electric impact tool and standard accessories for the following jobs: nut-running and removal,



drill steel, masonry, ream, apply and remove studs, tap, drive and remove screws, extract broken cap

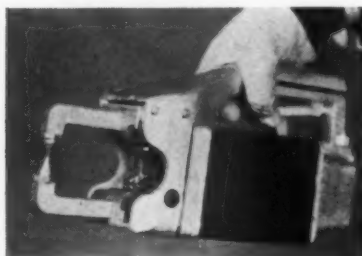
screws and studs, do hole saw and wire brush work. The tool weighs 6½ pounds.

The kit includes the impact tool with Jacobs collet type chuck, six hex sockets of varying sizes, a Morse Taper socket, and adapter sleeve. It plugs in any AC-DC electric socket and runs any conventional electric tool until the going gets tough. Then the impact mechanism automatically functions and delivers 1900 rotary impacts per minute.

Ingersoll-Rand Company, 11 Broadway, New York 4, N. Y.

Hand Welder 134

A hand-operated spot welder weighs 20 pounds, has 12 feet of conduit attached, operates on 110 volt a-c, also on 220 volt, and is available in combination 110-220 volt 60 cycle a-c. Heat output 2.5 kw



requires 45 amp fuse. 4½ in. tongs in unit have adjustable tips mounted.

Spot welds mild through stainless and galvanized steels, to aluminum in total thicknesses of about ½ in.

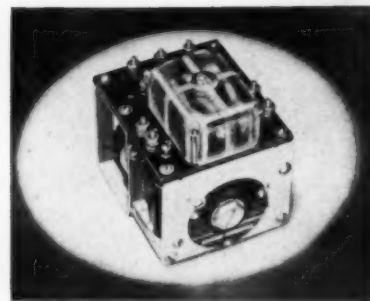
Extra tongs come in sets, one pair each 6, 12 and 18-in. with center point tips mounted, includes also one pair off-center point tips.

A-C-Devices Company, 8006 Champlain Ave., Chicago 19, Ill.

Relay 135

Bulletin 362 motor-driven time delay relay with composite connections is announced. This a-c timing relay is designed for use in control equipments or systems where an adjustable time delay, after closing the pilot circuit, is required for proper remote, automatic or sequential operation.

By connecting external connection jumpers to the relay terminal board, two different timing sequences can be obtained. With one set of connections "delayed make" with a maintained pilot circuit is provided. The other set of connections permits



"instantaneous make" and "delayed break" with a momentary contact pilot circuit.

The relay consists of a small synchronous motor, a differential gear system, a built-in brake assembly, a trip switch assembly, an accessible terminal board, and an auxiliary relay. It is also equipped with a safety locking device.

Ward Leonard Electric Co., 37 South St., Mt. Vernon, N. Y.

Welding Gloves 136

Chrome-tanned cowhide welding gloves are medium weight, made of one piece employing the wing-type thumb construction and fabric lined cuff. The wing-type thumb allows maximum thumb action



without binding or pulling across the palm. The sturdy fabric cuff lining prevents sagging or crumbling of the cuff section. Exposed seams across the back have been eliminated, thereby minimizing the possibility of cuff separation.—*Dept. 1727P, Air Reduction Sales Company, 60 E. 42nd St., New York 17.*

**"WE TRIED OTHERS BUT
ALWAYS CAME BACK TO P-K"**



**TYPE "A"
SHEET METAL SCREWS**

● There's a good reason so many sheet metal men feel this way about P-K Type "A" Sheet Metal Screws. For more than 30 years P-K's Type "A" has helped sheet metal contractors do better work and make bigger profits through faster, stronger assemblies. There's nothing like Type "A" for ducts, fan housings, exhaust systems—any sheet metal assembly up to 18 gauge.

And Type "A" is only one of a famous family of P-K fastening devices. It's plain common sense for you to take advantage of every "short-cut" they make possible by eliminating tapping, bolting, riveting, soldering.

Got a job using heavy sheets? Use Type "Z" or the heavy duty Hex Head Type "Z". Type "Z" is made in Stainless, too, if you make stainless equipment for restaurants, etc.

Got a job requiring fastenings to masonry? P-K Masonry nails are "made to order"—easier, quicker and cheaper than other methods.

Got a siding job? Use P-K Screwnails. They drive easily as nails — hold like screws.

**Know the
Complete Line
of P-K Fastenings!**

Write for Booklets Nos. 480 and 475A. Booklet No. 480 lists proper hole sizes for efficient driving and maximum security, and gives other helpful information. *SAMPLES, too. Just tell us what you are fastening.* Parker-Kalon Corporation, 200 Varick St., New York 14.



P-K



PARKER-KALON

SELF-TAPPING SCREWS

A FASTENING FOR EVERY METAL AND PLASTIC ASSEMBLY

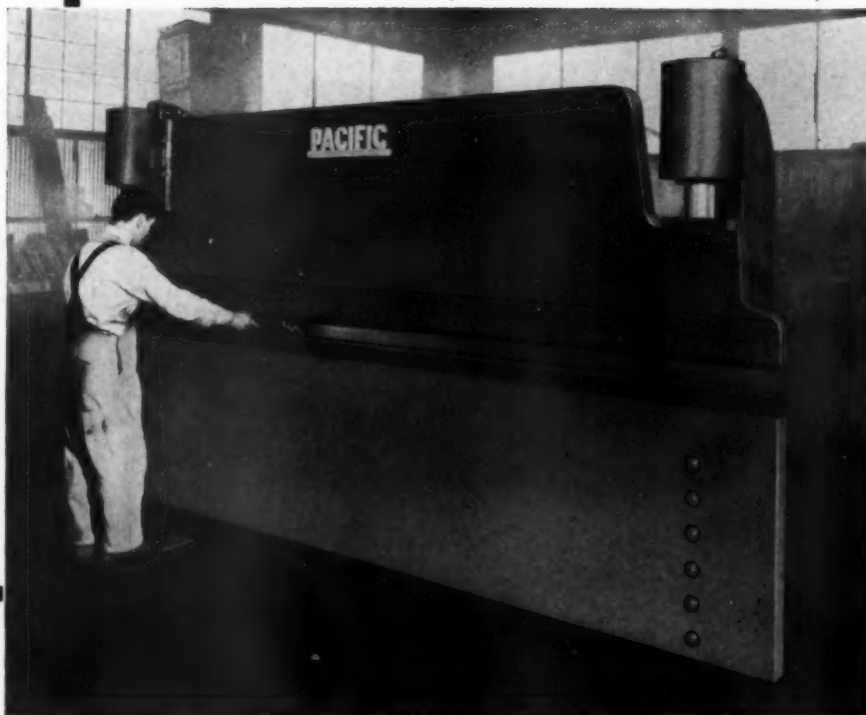
FEATURES:

Full pressure at any point in the stroke

•
Extra-long stroke—
instantly adjustable to
any desired length
up to 6"

•
Complete, instant
control of ram
movement at all times

•
High speed for faster
forming and punching



PACIFIC *Hydraulic* PRESS BRAKE

New SERIES 75 Direct-Acting

6 MODELS • from 12 ga. x 6' to 10 ga. x 12' capacities

Here's a totally new kind of press brake that brings you advantages you've always wanted. It's *hydraulically operated*, which means you get full pressure at any point in the stroke. You can stop the ram at any point, and re-start it with *full pressure*. It means faster, easier set-up of punching and forming dies, because stroke length is instantly adjustable and infinitely variable up to a maximum of 6". Stroke speed is proportional to length of stroke (maximum is 40 strokes per minute).

It's an exceptionally "clean" press, with no clutches,

gears, or overhead shafts—plenty of clear working space both in front of and behind the ram.

SERIES 75 Direct-Acting Pacific Press Brakes are made in 6 standard models, with capacities ranging from 12 ga. x 6' to 10 ga. x 12', and with overall die surfaces to 12'. Throat depth is 6".

Write or wire for complete data on PACIFIC Hydraulic Press Brakes. The full line includes 26 models with capacities ranging from 12 ga. x 6' to 1" x 14'... and with overall die lengths to 22'. Larger units may be built to your requirements.

**PACIFIC INDUSTRIAL
MANUFACTURING CO.**
848 Forty-Ninth Avenue • Oakland 1, California



FUEL SHORTAGES mean an opportunity for you to get New Business and More Profits with



THE **LAU**
400-A series
"Package"
BLOWER-FILTER
UNIT

DISTINCTIVE LAU FEATURES

- Shipped assembled . . . will go through any door. (Models 404-A, 405-A and 406-A may be knocked down for installation purposes.)
- Large size access door . . . easy to service motor, belt or filters.
- The variable speed motor pulley is readily accessible for adjustment if necessary.
- Motor equipped with an integral automatic thermal overload protector.
- Cold air return easily fitted into top of unit.
- No metal-to-metal contact between blower and casing.
- Bearings and motor are rubber cushioned.
- Low speed, quiet blower minimizes noise and vibration.
- Top motor mounting . . . keeps the motor off the floor, away from moisture . . . permits use of more compact housing . . . requires minimum of floor space.

LAU Package Units are manufactured in varying capacities suitable for dwellings of from five to eight rooms. All sizes available with quick delivery.

Get the facts before you buy. Only LAU can offer you unmatched quality at such low prices. Write today.

Now . . . you have the opportunity to gain added profits and new business with this modern, efficient blower-filter unit. "Critical fuel shortage"—that's what is plaguing the consumer . . . and you. With the extreme gas and oil shortage, thousands of consumers are demanding better and more economical ways of heating. You can help them and yourself, too, by recommending this efficient, low cost unit.

The LAU 400-A Series Package Unit is the obvious means of obtaining relief at low cost and with *outstanding* performance. The efficiency of any gravity type warm air furnace can be stepped up immediately. More evenly balanced temperatures provided automatically and quickly. All rooms in the home become pleasant and comfortable with warm, dust-free air. Handsomely styled, the LAU Package Units have well-proportioned casings . . . ruggedly constructed of heavy gauge steel. Full, round corners. Surf green baked enamel finish. Chromium hardware. Filters are of throw-away type and all 1" thick.

WRITE DEPARTMENT "A" FOR THE
COMPLETE DETAILS—NO OBLIGATION



*World's Largest
Manufacturers of
Furnace Blowers*

THE **LAU BLOWER CO.**
DAYTON 7, OHIO

Gas-Tight Joints *made easily* with **FIREITE***



Fireite goes on quickly, forms tight seal

HERE is an easily worked sealing cement—ready mixed, ready to use—which you can quickly apply to any clean surface. It air-sets or heat-sets equally well into a practically indestructible joint.

Fireite remains gas-tight against the highest temperatures as well as expansion and construction strains—especially important features on domestic oil burner and stoker installations where airtight, gas-tight joints are essential for efficient combustion.

Fireite Asbestos Furnace Cement has minimum shrinkage, does not crack, crumble or

bloat. It keeps well on the bench and in the container . . . is odorless.

Use Fireite for mounting or repairing heating equipment—for setting ash pits and fire pots, doors, dampers and other places where sealing is necessary. With Fireite there is less danger of costly call-backs for re-sealing.

Write for free 4 lb. sample

Let us send you a can of Fireite Furnace Cement and a copy of folder RC-7A. Simply write giving your name and the name of your company. Address
Johns-Manville, Box 290, N. Y.



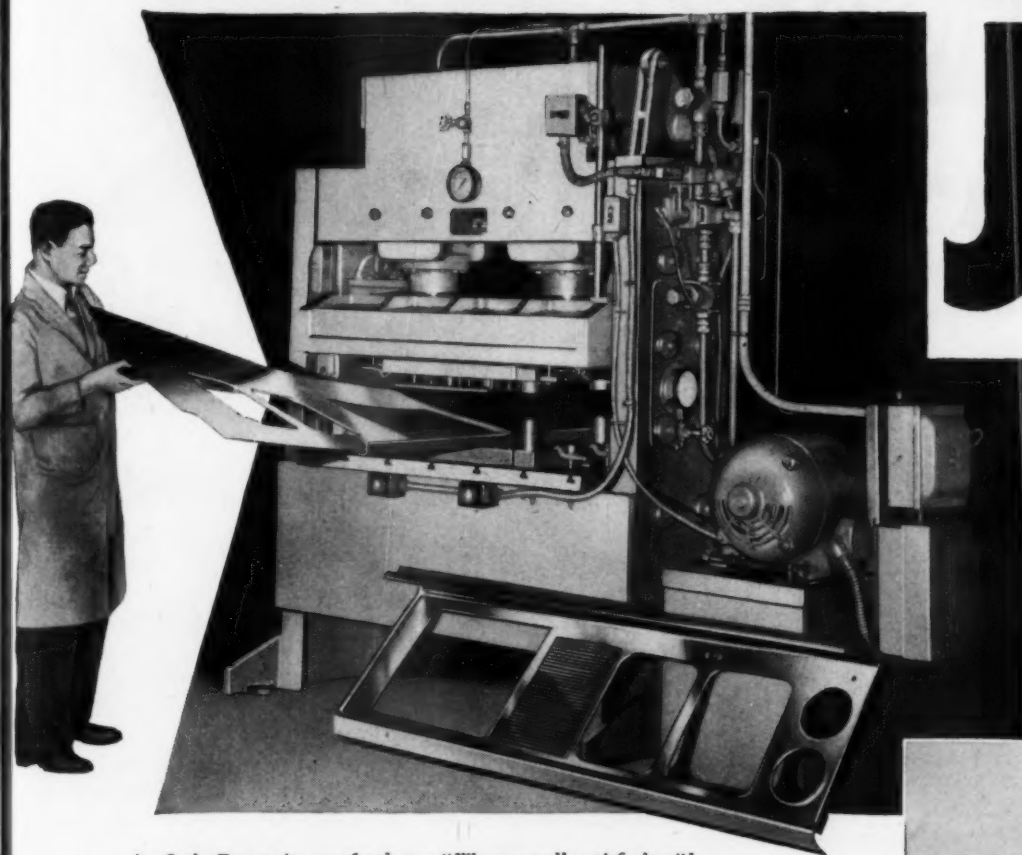
*Reg. U. S. Pat. Off.

Johns-Manville

FIREITE asbestos furnace cement

**YOU have answered
the long-felt need for
a SMALL PRESS that does a**

**BIG
JOB'**



**ACE SODA FOUNTAIN
USES A KRW 100-TON
PRESS TO BLANK AND
FORM STAINLESS STEEL
TOPS . . . RELEASING
LARGER EQUIPMENT
FOR OTHER WORK.**

Ace Soda Fountain says further—"We are well satisfied with the performance of your model 37V Hydraulic Press. Its versatility, in the various blanking and forming operations which we do, exceeds the claims made in your specifications."

INDUSTRY HAS PROVEN that, on a large percentage of average blanking and forming work, large, heavy-tonnage presses, with their high initial and operating costs are unnecessary. The experience of many KRW users has demonstrated this fact beyond any doubt.

KRW Hydraulic Presses are highly adaptable . . . they are available in tonnages from 25 to 100 . . . in varying bed widths and lengths. Because they are hydraulically operated and not mechanically driven, they are extremely quiet and vibrationless in operation. First cost is very low, operating costs are still lower. In one instance, the purchase price of a KRW Press was less than the foundation cost of heavier equipment originally planned.

Let us know your needs, we'll show you how to save money in a big way. Deliveries in 8-10 weeks on large presses, one week on standard presses.



Many parts of this Ace Soda Fountain, including the top, are blanked and formed on the KRW Press shown.

NAME YOUR NEEDS! MAIL COUPON TODAY!

K·R·WILSON

215 MAIN ST. · BUFFALO 3, N. Y.

K. R. WILSON, 215 Main St., Buffalo 3, N. Y.

Please send complete information on New KRW
100-ton Hydraulic Presses.

Name

Address

City and Zone..... State.....

NOW AVAILABLE FOR
Immediate Delivery **AND**
NATIONAL DISTRIBUTION

SPHINX FURNACES

*Custom
Built*

FOR HOME AND APARTMENT BUILDINGS

*Unsurpassed for Clean,
Automatic, Economical Heat*

Sphinx gas and oil fired furnaces were designed and developed by C. L. Bryant, successful Heating Engineer, with 40 years of specialized gas heating equipment experience. A. G. A. approved **Sphinx Furnaces** are of superior construction . . . thoroughly proved by years of actual satisfactory service in thousands of homes.

Sphinx Furnaces are easily and quickly installed. Flue and Blower can be placed at either side or rear. A **Sphinx** will continue to deliver trouble-free performance with a minimum of dealer service calls. The Complete **Sphinx** Line offers both Gravity and Winter Air Conditioning Units.

There is a Custom Built **Sphinx Conversion Burner** for every type and size of heating unit—75,000 to 750,000 B.T.U. Capacity. **WRITE, WIRE OR PHONE FOR THE SPHINX DEALER PLAN.**



SPHINX

AUTOMATIC GAS—OIL FURNACES



C. L. BRYANT CORPORATION
4610 ST. CLAIR AVENUE • CLEVELAND 3, OHIO



The Alnor Velometer Jr., 4" x 3" x 1½"; available in single or double range scales; double-pivoted, double-jeweled movement for increased accuracy.

Announcing the New Alnor Velometer Jr.!

Here's the new Alnor Velometer Jr.—Illinois Testing Laboratories' most recent perfection in precision air velocity measurement instruments. A small, portable, completely self-contained unit, the new Velometer Jr., answers a long felt need for an accurate, instantaneous direct reading instrument that is *low in cost*.

Amazingly accurate . . . easy to read, this inexpensive Velometer gives direct reading of air velocity in feet per minute *without* bothersome timing, calculations or reference to tables and charts.

The new Velometer Jr., can be adapted to a score of uses when installing new work or maintaining efficient operation of established systems. Send for bulletin and prices!

Alnor

PRECISION INSTRUMENTS
FOR EVERY INDUSTRY

ILLINOIS TESTING LABORATORIES, INC.
Room 538, 420 N. La Salle Street, Chicago 10, Illinois



America's first **PLANNED POST-WAR CITY...**

... planned for "a better life" ...

... planned with **MOR-SUN FURNACES**

On the sloping hills south of Chicago, Park Forest, a city for 30,000 people, is being built in one integrated operation . . . America's first "planned" post war city designed for "a better life".

Its creators, the American Community Builders, have taken all the essentials for an ideal community . . . for a comfortable, pleasant life.

The first section, Park Forest, is well under way, and each of the 3,010 rental homes therein will have its individual MOR-SUN gas furnace to supply forced warm air heat. In the summer the blowers in these furnaces will be utilized to create comfort by circulating air throughout each house.

MOR-SUN is proud to be part of this superhousing project, this "better life" city . . . proud to be part of what Collier's Magazine (Feb. 14, 1948 . . . "City to Order") calls "one of the most important experiments in housing and in living attempted in many years"!

General Contractors . . . American Community Builders, Inc., Chicago
Architects . . . Loeb, Schlossman & Bennett, Chicago
Heating Contractors . . . Sunbeam Heating & Air Conditioning Co., Chicago
MOR-SUN Midwest Sales Representative . . . Wallace Landau, Chicago

MORRISON STEEL PRODUCTS, INC.

601 AMHERST ST.

BUFFALO 7, N. Y.



"The Sun Never



Sets with MOR-SUN"



NEW Flexible Duct Connector

**WITHSTANDS HEAT
AND PRESSURE**

Above is shown installation of the new Bauer & Black Flexible Duct Connector in the air conditioning system of Abbott Laboratories, North Chicago, Illinois.

The new connector withstands heat and pressure, providing a tight, fast seal that *grows stronger with age*. (Elements of the connector are explained in the panel at right.) The seal is so tight and so effective because the Bauer & Black Industrial Adhesive Tapes used have two unique components:

- A.** *Backing of Fibreglas* Cloth — thin, super-strong, permanent. Resists heat, light, deterioration. Won't shrink or stretch.*
- B.** *Vulcanizable adhesive, whose strength increases greatly under heat, and whose seal grows stronger with age.*

* The Bauer & Black Flexible Duct Connector fills a long-standing need. It's speedily installed, cutting labor costs. It gives neat appearance as well as airtight fit. Component materials are easily handled.

SAVE TIME AND MONEY!

Improve your installations, save time and expense by using this new duct connector! Write for full information on applications, source and price. Address Dept. T8-6, today! No obligation.

THESE ARE THE PARTS OF THE NEW CONNECTOR



Bauer & Black Industrial Adhesive Tape No. 281—Fibreglas fabric coated on both sides with vulcanizable adhesive. Makes airtight seal that grows stronger with age.



Neoprene-coated Fibreglas fabric—sturdy, airtight, yet not bulky. Easy to handle in complicated installations. Neat and trim appearing in finished job.



Bauer & Black Industrial Adhesive Tape No. 263—Fibreglas fabric, coated on one side with vulcanizable adhesive. Like No. 281, stubbornly resists deterioration. In the Abbott installation, No. 263 was used also to seal the joints between filter banks—replacing expensive caulking.

*Fiberglass (Reg. U. S. Pat. Off. by Owens-Corning Fiberglass Corp.)

Products of

BAUER & BLACK

Division of The Kendall Company • 2500 S. Dearborn St. • Chicago 16

Industrial Adhesive Tape

PRESSURE SENSITIVE

Production Short Cuts to Reduce Costs • Research to Speed and Improve Methods

look-no hands!



this is your heating superintendent
when you heat with Dravo Heaters

It's an *automatic* fireman who goes on the job at the flip of a switch for the Sanatex Company of Chicago. It cuts operational and maintenance expense to the bone and solves what had appeared to be an expensive heating problem for this processor of wiping cloths.

Not only is an attendant unnecessary—boiler-room and ductwork expense was eliminated, too, by installation of a Dravo *Counterflo* Heater. Centered along the east wall, the Dravo *Counterflo* Heater is entirely self-contained—requiring only power and fuel lines and a small vent stack. Its 1,000,000 BTU output is directed slightly over the heads of the workers to blanket 10,000 square feet

of unbroken plant area with draft-free warm air. Cold corners and excessive roof heat loss are eliminated. During summer months, a touch of the selector switch converts the Dravo *Counterflo* Heater immediately into a powerful air-circulating unit.

Dravo *Counterflo* Heaters are available in sizes ranging from 400,000 to 2,000,000 BTU output. Equally efficient with oil or gas and with or without ductwork, they can be floor-installed, wall-hung or roof-hung. Write for Bulletin ID-516. Heating Section, Dravo Corporation, Dravo Building, Pittsburgh 22, Pennsylvania.



According to Mr. Schulman, President of Sanatex Company, the Dravo *Counterflo* Heater "is the best equipment we ever had. Delivery of heat is virtually instantaneous when the unit goes into action—an important fuel-saving feature which eliminates the need for anticipating cold spells or keeping the heater in operation when the plant is closed."

PITTSBURGH • CLEVELAND
PHILADELPHIA • DETROIT
NEW YORK • CHICAGO
ATLANTA • BOSTON



Dravo also manufactures the DRAVO CRANE CAB COOLER for air conditioning hot-metal crane cabs.

DRAVO CORPORATION

Sales Representatives in Principal Cities

Weirzin

ELECTROLYTIC ZINC-COATED SHEETS AND STRIP



permanently protects
AGAINST UNDERFILM CORROSION

Paints, enamels, lacquers, varnishes and lithographic inks adhere to Weirzin securely, permanently, because under-film corrosion cannot occur. The tight, malleable zinc coating, electrolytically applied, becomes an integral part of the sheet or strip . . . remains intact under all conditions of temperature and humid-

ity . . . and provides a perfect "tooth" for spray, dip or roller applications.

Extensive fabrication does not weaken this protection—after deep-drawing, forming and punching, the zinc coating remains unruptured and evenly deposited.

Write today for a sample . . . put it to test . . . then consider how Weirzin would fit into your production picture.

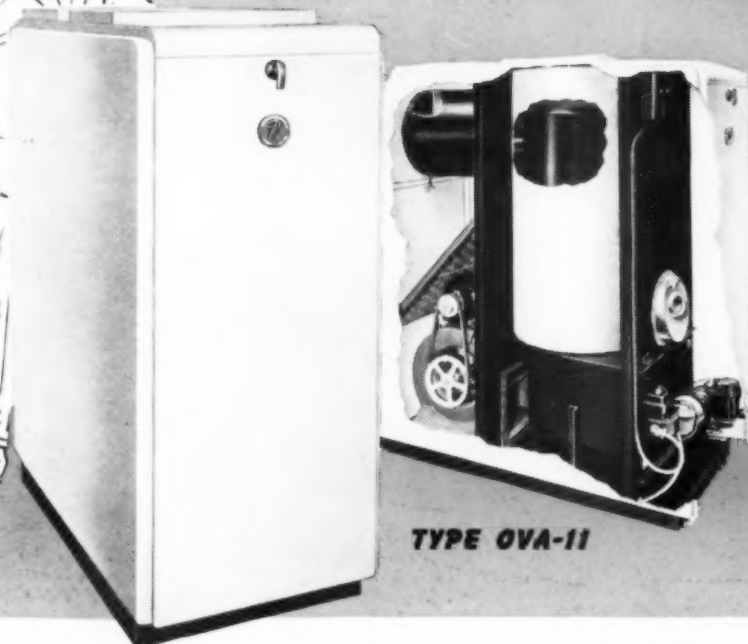


WEIRTON STEEL CO. WEIRTON W. VA., Sales Offices in Principal Cities

Division of NATIONAL STEEL CORPORATION, Executive Offices, Pittsburgh, Pennsylvania

Talk about "SELL-ABILITY!"

**NEW RICHMOND OIL WINTER AIR CONDITIONER
HAS IT TO SPARE...**



NOTE THESE SPECIAL RICHMOND FEATURES

1. Capacity: 75,000 Btu. at bonnet. A just-right size for the modern, compact home.
2. Vaporizing type with "Magic Pilot" —unusually low flame—as little heat as a gas flame.
• No overheating in mild weather.
3. Automatic control of oil-air ratio at all stages of fire keeps pot purged!
4. Carries one years' replacement guarantee. Listed by Underwriters' Laboratories, Inc. Conforms with Commercial Standard CS104-46 as published by the U. S. Dept. of Commerce.

The new low-priced Richmond Oil Winter Air Conditioner really smooths your way to low-cost home heating installations. Less than 4 ft. x 2 ft. floor space required—saves valuable space in the compact home. 54½ inches low... easily installed in minimum head-room jobs.

Pay off with installation savings, too! Burner unit comes completely assembled. The Furnace, also, comes completely assembled and wired. All you do is turn four wing nuts, adjust two levelling bolts, make minor electrical

connections and the unit is ready to install. Cuts time and costs on the job. And—your customers won't ever forget Richmond's whiter-white steel jacket that *stays* white. Special Richmond enamel formula does the trick.

No wonder architects, builders and heating contractors call the Richmond Oil Winter Air Conditioner 'matchless' for low-cost home installations. Full details on this popular unit are yours on request. Simply fill out the coupon below, and see it into the nearest post box today.



RICHMOND RADIATOR COMPANY
AFFILIATE OF REYNOLDS METALS CO.



Plumbing Fixtures: Enameled Cast Iron Ware Vitreous China Perma Gloss
Heating Equipment: Oil and Gas Winter Air Conditioners Gas Boilers Radiators

— CLIP AND MAIL COUPON TODAY —

Richmond Radiator Company
19 East 47th Street, New York 17, N. Y.

6AA

Gentlemen:

I am interested in the New Richmond Oil Winter Air Conditioner. Please send me full details. No obligation, of course.

Name.....

Company.....

Address.....

No other control system offers all these outstanding advantages...



B-60
ALL-GAS
CONTROLS



- SELF-OPERATED, NO OUTSIDE CURRENT REQUIRED
- SIMPLIFIED TWO-WIRE CONTROL
- ACCURATE ROOM TEMPERATURE CONTROL
- AUTOMATIC SAFETY SHUT-OFF
- SILENT OPERATION

AUTOMATIC, SAFE, SILENT AND SELF-OPERATED

A completely self-contained and self-operating control system. For natural, manufactured or L. P. gases. For all kinds of domestic, commercial or industrial applications. System consists of the B-60 pilot operated diaphragm type gas valve, the T-70 Series Trimtherm Thermostat, which is scientifically correct in design, and the

ingenious Pilot Generator which produces the operating current, safety control, and main burner ignition. The B-60 Series of controls have set new standards throughout the gas industry. For complete specifications on the GENERAL CONTROLS broad line of Automatic Pressure, Temperature and Flow Controls, request our new Catalog. For Gas Heating Controls, request Service & Instruction Manuals.

GENERAL CONTROLS

Manufacturers of Automatic Pressure, Temperature & Flow Controls

NEW YORK (1), BIRMINGHAM (1), BOSTON (1), CHICAGO (1), CLEVELAND (1), DALLAS (1), DENVER (1), DETROIT (1), HOUSTON (1), KANSAS CITY (1), NEW YORK (1), PHILADELPHIA (1), PITTSBURGH (1), SAN FRANCISCO (1), SEATTLE (1). DISTRIBUTORS IN PRINCIPAL CITIES



ANOTHER JOB with
Extra Profit!

When one profitable job leads to another, that's good business. And that's exactly what happens when you sell DUST-STOP* replacement air filters.

Every time you install new air filters, you make a good profit. And each filter installation is an opportunity to check for additional service business—extra profits! Since, in most localities, filters require changing twice a year, you can keep posted on a good share of the money-making service business in your territory.

It works the other way, too. Repair jobs on forced-warm-air systems add to your filter prospects—another chance to build dependable, recurring profits.

DUST-STOP is the air filter to sell. Original equipment in most brands of modern warm-air furnaces, DUST-STOP is the logical replacement. To help you, there's the weight of strong national advertising, plus timely selling helps for your own use. They can turn your off season into a profit season! Contact your DUST-STOP distributor, jobber, or write Owens-Corning Fiberglas Corporation, Dept. 930, Toledo 1, Ohio.

In Canada: Fiberglas Canada Ltd., Toronto, Ontario.

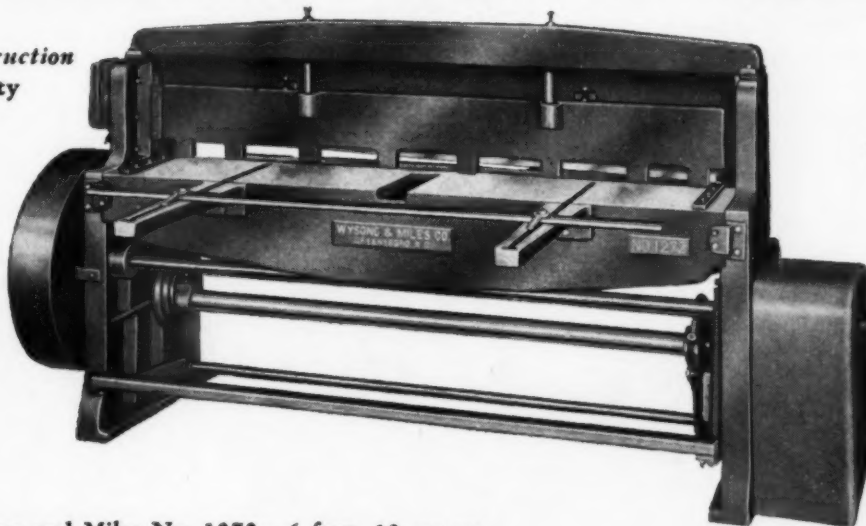
DUST-STOP
*T. M. REG. U. S. PAT. OFF.



AIR FILTERS
-a Fiberglas* product

Economical...CLEAN BURR-FREE SHEARING

**Massive Construction
for Rigidity**

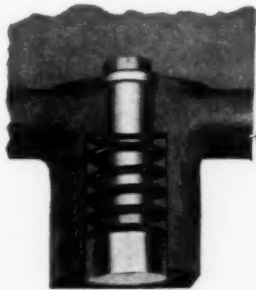


**Hardened Steel
Sliding-key Clutch**

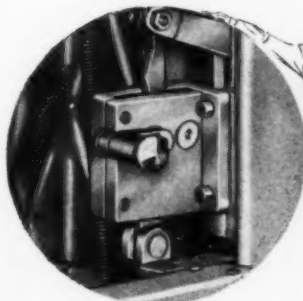


Wysong and Miles No. 1272—6 foot, 12 gauge

**Compensating Action
of Each Holddown Foot**



**Non-Repeat Unit
for Safety**



**Precision Back Gauge
Adjustable to .0078 inch**



PRECISION FEATURES INSURE SPEED AND ACCURACY

You'll get long, dependable performance from this finely engineered Wysong and Miles Power Squaring Shear. Built for economy, it has the precision features necessary for rapid, safe and accurate shearing in the production rush of today . . . operators are enthusiastic about the fine work done by this improved squaring shear, on the job in sheet metal plants throughout the country.

The parallel, ball-bearing back gauge can be quickly changed in units of .0078 (1/128th) of an inch by a handwheel dial

reading. The individual spring actuated plunger in each holddown foot acts as a powerful independent clamp . . . metals of varying gauges or narrow strips can be sheared without adjustment. The non-repeat unit of the positive hardened steel clutch stops shearing action after each cycle; or it can be set for continuous shearing. High speed blades are standard equipment. Other Wysong and Miles Power Squaring Shears in 8 foot, 12 gauge; 6 foot, 10 gauge; 6 foot, 14 gauge; and 52 inch, 14 gauge capacities.

Write for complete information on Wysong and Miles Sheet Metal Machines . . . Motorized, Air-Power and Foot-Power Squaring Shears; Power and Hand-Operated Bending Rolls; Combination Machines.

WYSONG and MILES CO

621 FULTON STREET GREENSBORO, NORTH CAROLINA

THE FINEST IN SQUARING SHEARS AND BENDING ROLLS

QUIET OPERATION • GRINDING MOUNTING • CONVENIENT BLADE MOUNTING

just right for your fans

PERMANENT LUBRICATION

To power your fans quietly and dependably, G-E unit-bearing motors are *just right*. They're inexpensive, and important too... they're available from stock *now*.

Lifetime lubrication from a sealed-oil reservoir insures long, quiet operation. Totally enclosed, one-piece construction keeps out harmful dust and grit. Combining smooth, modern looks with a scientifically engineered, shaded-pole design, G-E unit-bearing motors have a low starting torque that gives your fan smooth, even acceleration. Use low-cost stamped metal fan blades available from our factory; or the convenient hub will easily adapt your own fans.

For further details on these outstanding motors, contact your nearest G-E sales representative or write for GEC-219. *Apparatus Department, General Electric Co., Schenectady 5, N. Y.*

LONG LIFE • LOW COST • TOTALLY ENCLOSED

GENERAL ELECTRIC

**FOR QUICK *Profits*
PUT YOUR MONEY
ON THIS LINE**

**This New *UTILITY*
Built-In Wall Heater
is a "Natural"**

This new built-in circulating heater is winning contracts everywhere—as the sole heating equipment for small units, and as extra heat in larger buildings. Pre-assembled at factory, with plaster guides and header for easy installation in any standard 4" stud wall, without furring. Richly styled with lots of sales-building features. Single or dual models, vented, 15,000 to 50,000 BTU input, with automatic or manual controls.

Utility heating appliances meet the requirements of new buildings or old... with features that are attractive to architects, builders and owners... at prices that produce quick sales, that are profitable to you. High quality performance and long life of *Utility* appliances assure you trouble-free installations and satisfied customers. Let us send you complete information on the *Utility* line of modern heating appliances.

UTILITY

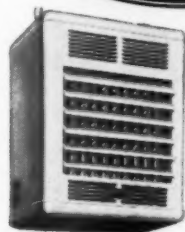
UTILITY APPLIANCE CORP.

4851 S. Alameda St., Los Angeles 11, California
DIVISIONS: Gaffers & Sattler • Occidental Stove Co.



FORCED AIR FURNACES

Provide year-round comfort—clean filtered warm air heat for winter and clean filtered fresh air coolness for summer. Compact for small space installation. Specially designed, *Utility*-built blowers. 75,000 to 150,000 BTU models.



**UNIT HEATERS
—SUSPENDED TYPE**

For commercial and industrial heating. Burner, heat exchanger, draft diverter, motor, fan, and all other parts self-contained in enameled steel cabinet. Adjustable grilles direct heat as desired. 90,000 and 150,000 BTU models.

All *Utility* heating appliances are approved by American Gas Association



FLOOR FURNACES

Low cost heating for homes of moderate size. Simple installation in old or new homes. Fit under any floor. *Utility*-built burner gives quiet, even flame. Flat and dual register models. 37,000 and 50,000 BTU capacities. Vented.



CIRCULATING HEATERS

Clean, healthful, safe heating at lowest cost. Graceful design, baked enamel finish, chrome trim. Front discharge gives maximum warm air circulation. Compact design for convenient location. Vented. 25,000 and 35,000 BTU models.

FOR

*Quality Products
Prompt Service
Profitable Cooperation*

Buy from a Herman Nelson Distributor like the Herrick Company of South Boston, Mass.



William H. Rigby, Manager
Heating & Ventilating Division
Herrick Company

THE Herman Nelson Corporation and carefully selected distributors like the Herrick Company of South Boston, Mass., do more than provide you with quality heating and ventilating products. Their friendly, close working partnership means that you get **prompt delivery** of quality Herman Nelson products and carefully planned merchandising co-operation which has increased profits for dealers and contractors all over America.

Effective advertising, literature and sales promotion campaigns create an acceptance for Herman Nelson products that leads to increased sales and profits. Furthermore, you are assured of immediate service from the sales and engineering departments of your nearest Herman Nelson distributor. Here's another advantage. Your Herman Nelson distributor will supply you with both equipment and installation materials promptly from stock.

Contact a Herman Nelson distributor and profit from his complete cooperation. You'll find his services increase your profits through more sales of heating and ventilating equipment.



THE HERMAN NELSON CORPORATION

Since 1906 Manufacturers of Quality Heating and Ventilating Products
MOLINE, ILLINOIS

NEW LITERATURE

Use the Coupon on Page 111

Automatic Oil Heaters.....259

Catalog No. 12 entitled "How to Make the Yardstick Zone the Comfort Zone," covers the complete line of Coleman automatic oil space heaters. Text and illustrations in color describe the various models, their features, various parts, and accessories.

The Coleman Company, Inc., Wichita 1, Kansas.

Stainless Products.....260

A list of some of the many products sheet metal fabricators are making or can make of stainless steel in outside and inside construction work, as well as industrial sheet metal work, are bound in with an 8-page booklet entitled "The House of Stainless News and Views" showing many stainless steel applications and the telling of the ease in working stainless.

Chicago Steel Service Company, Ashland Ave. at 39th St., Chicago 9, Ill.

Combustion Chambers.....261

An 8-page catalog covers the RexRoto combustion chambers and baffles for any style furnace with any make burner.

There are instructions for easy installation, following illustrations of the vertical combustion chamber with and without the free supported cone baffle, a horizontal-baffled combustion chamber, and a horizontal-rectangular combustion chamber. Rex-Roto insulating cement fill and its use are covered. Ratings and data are given.

Rex Clay Products Company, 14414 Dexter Blvd., Detroit 6, Mich.

Steel Furnaces.....262

A six-page folder illustrates the Oneida Royal warm air steel furnaces for coal, available in round or square casings and interchangeable for oil or gas.

Grate bars are locomotive type.

The furnace with round casing is available in six sizes. The square cased model gravity furnace and the winter air conditioning unit are both available in four sizes.

The Oneida Royal square jacket exterior is finished in a heat resisting mellow green enamel. A dark green enamel covers the top and trim. The front is finished with aluminum paint.

Hart & Crouse Corporation, 109 North Warner St., Oneida, N. Y.

Maybe "more production" isn't the answer to all our problems

AMERICAN INDUSTRY is already producing at almost double its pre-war rate. Yet with labor and material costs at an all-time high, the experts insist that we must produce still more goods, faster, more efficiently, if we are to avoid another boom-and-bust cycle.

We'll buy that—as far as it goes.

But let's never lose sight of the fact that production is only half the problem. Because for every increase in our rate of production, there must be a comparable rise in our *rate of sales*.

Actually, of course, there is no such thing as producing goods at a profit. Goods are *sold* at a profit—yes. And while production line savings are vitally important, it is of equal importance to keep down the

cost of *manufacturing sales*.

That is the function of *mechanized selling*—to produce sales on a mass production basis, and at the lowest possible cost per unit. Translated into more familiar terms, it simply means advertising to the right market, in the right way, at the right time.

Like the machine on the production line, good advertising is a multiplier of men's efforts, for it enables us to produce (and *earn*) far more than we could alone. And when it goes to work in business papers—with their tremendous concentration of hand-picked readers — advertising becomes the most efficient machine at our disposal for *manufacturing sales at a profit*.

What are the ten ways to measure the results of your business paper advertising? You'll find the answers in a recent ABP folder, which we'll be glad to send you on request.



AMERICAN ARTISAN

is one of the 129 members of The Associated Business Papers, whose chief purpose is to maintain the highest standards of editorial helpfulness—for the benefit of reader and advertiser alike.



HERE
is the
INSIDE
STORY!

It's the story of the fuel-saving GILBARCO—the ideal replacement burner for you to sell the customer who is looking for ways to cut down oil consumption.

It's the story of the ECONOMY CLUTCH—an amazing GILBARCO development, and the most important oil burner advance in 25 years. Conclusively proved to cut fuel consumption . . . *actually gives more heat per gallon!*

There's a Sales Edge for You when You Offer Customers the
ADVANTAGES OF THE ECONOMY CLUTCH!

- **IT GIVES GREATER FUEL ECONOMY**... freedom from heavy soot deposits results in important fuel conservation.
- **IT PRODUCES MAXIMUM HEAT**... precision stimulation assures full burning of the fuel from instant of ignition.
- **IT ALLOWS MORE UNIFORM HEATING**... closer thermostat adjustment permits more even comfort control.
- **IT ASSURES CLEANER HEATING**... both inside and outside the heating plant.
- **IT OPERATES WITH NEW QUIETNESS**... the burner starts and stops quietly, with no strain on the motor.

There's a great sales opportunity with the Gilbarco Oil Burner... one burner that's different... one burner that's better... one burner that can ring up profits for you!

TO DEALERS WEST OF THE APPALACHIAN: Some franchises are still open! They're money-makers for alert dealers. Write or wire for full facts.

Gilbarco

**THE OIL BURNER
WITH THE
ECONOMY CLUTCH**

GILBERT & SARGENT MFG. COMPANY
NEW BRANFORD, MAINE, AND TORONTO, CANADA

NEW LITERATURE

Use the Coupon on Page 111

Ventilator and Exhaust Fans.....263

A 1948 fan catalog (unit X6049) covers kitchen ventilators, exhaust and cooler fans, with detailed dimensional information. There is design and construction specifications with complete performance data.

The Emerson Electric Manufacturing Company, 8100 Florissant Ave., St. Louis 21, Mo.

Plant Safety.....264

Safety is the title of a 20-page and cover—5½ x 8-in.—booklet, covering "Safety-Award Al" and his talks on good housekeeping, lifting—the wrong and right way, safety clothing, cleaning machinery, horse play, molten metal, fire and the use of extinguishers, the plant hospital, first aid, handling the injured, ladders, scaffolds, stairs, broken and worn tools, cranes, dangerous gas, welding, electric wires, etc.

Allegheny Ludlum Steel Corporation, Oliver Building, Pittsburgh 22, Pa.

Barometric Control.....265

A four-page folder covering the Barocheck for hand-fired heating plants gives the story of the tests that have been run on this control.

Another four-page bulletin points out for the dealer and consumer the advantages of having the Barocheck installed on their hand-fired units. This control is easily converted to the type M 8-9-in. barometric control for conversion to stoker, oil, or gas-fired units. The Barocheck is also readily adaptable for use with the damper motor unit.

Field Control Division, H. D. Conkey and Company, Mendota, Ill.

Handbook of Building Coverage.....266

A 28-page handbook offers the latest engineering details, illustrations and estimating tables to simplify the installation of Plasteel roofing and siding for industrial buildings.

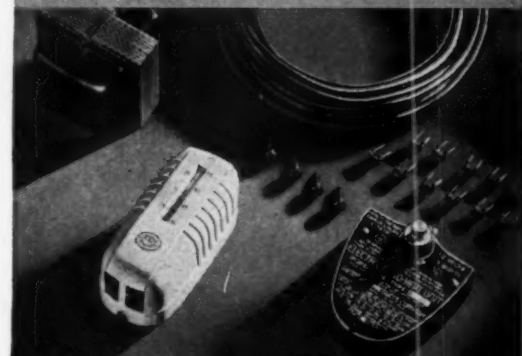
Plasteel roofing combines the strength of steel with the air-tight, permanent protection of asphalt-plastics, topped with silvery mineral mica that needs no paint.

Plasteel in flat, corrugated and V-beam sheets is available in standard gauges, widths and lengths for application on wood or steel construction.

The new handbook also offers a complete engineering and fabricating service for consultation on any building problems.

Plasteel Products Co., Washington, Penn.

Save Oil FOR YOUR CUSTOMERS with this popular-selling



THERMOSTATIC HEAT REGULATOR SET

Now, while your heater customers are totaling last season's heating costs, is the time to suggest installing an A-P THERMOSTATIC HEAT REGULATOR Set. You can promise substantial savings, plus the added comfort of steadier room temperatures, with this set on any vaporizing burner oil heater using A-P Safety Oil Controls. This includes new heaters as well as those made since 1939 — using A-P Controls No. 240-Y, U, or D series.

Here's a rich accessory sales opportunity — with a prospect list you've been building up for EIGHT YEARS . . . Heater owners waiting and watching for AUTOMATIC Temperature Control to truly modernize their vaporizing burning oil heaters.

SIMPLE TO INSTALL ON NEW OR OLD HEATERS



Just mount Electric Conversion Top on present A-P Manual Control. Then connect to modern Wall Thermostat and Transformer. "Sales Package" contains all accessories.

WRITE for complete Selling Material on A-P Oil Control Accessories — including A-P Thermostatic Heat Regulator Sets, Oilifter Automatic Fuel Handler, and Fuel Oil Trap-It.

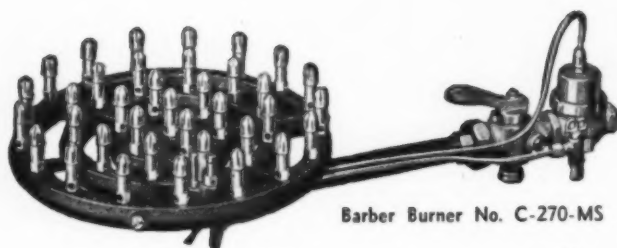
AUTOMATIC PRODUCTS COMPANY

2452 North Thirty-Second Street, Milwaukee 10, Wisconsin
O40C



DEPENDABLE OIL CONTROLS

DESIGNED TO ELIMINATE SERVICING



Barber Burner No. C-270-MS



Barber Burner No. U-10-MS

Something NEW Has Been Added to Barber Burner Service!

Unit Assemblies with Safety
Pilot and 100% Shut-off



Here's another improvement in our service to you. All individual Barber Burner units are now made available with complete valve type safety pilot and 100% shut-off, all combined, priced and shipped as one assembly.

Many state regulations now require the total shut-off device (even the pilot flame) for all installations using LP Gas. This new Barber series of models conforms with those regulations. Barber is offering these assemblies, in one package, on our entire line of single unit appliance burners for every use, and for all types of gas fuel. You will find them easier to order, easier to install, with all controls properly coordinated. Prices on request.

Barber makes a full line of all sizes of conversion burners for round or square furnaces and boilers. Also a great variety of burner units for gas-burning appliances for every purpose. Write for Catalog.

THE BARBER GAS BURNER CO.

3704 Superior Ave.

Cleveland 14, Ohio

BARBER *Automatic* JET GAS BURNERS

NEW LITERATURE

Use the Coupon on Page 111

Counter Display.....267

A five-color fan tail display is offered. This five color fan tail is used in a counter display featuring the new No. 600 self flushing, self cleaning humidifier recently announced.

Skuttle Manufacturing Co., 4099 Beaufait Ave., Detroit 7, Mich.

Fuel Oil Filters.....268

A two-page punched sheet covers General fuel oil filters, and tells of the need of this accessory to increase the burning efficiency of fuel oil systems and render them free of clogged burner nozzles.

The filter is installed in the fuel oil supply line between the tank and the burner, preferably at the burner.

General Filters, Incorporated, 12890 Westwood Ave., Detroit 23, Mich.

Registers and Grilles.....269

A new four-color register and grilles catalog totals 24 pages and cover. New items shown are push button registers, gravity registers (2 piece), ceiling diffusers, and floor registers of Uni-Grid construction.

The book is indexed, the various items are pictured and described, and list prices for the various sizes and finishes are tabulated. Engineering data is included, and well as the NWAH&ACA recommended register sizes.

Air Control Products, Inc., Coopersville, Mich.

Coal, Oil and Gas Equipment.....270

Seven product lines are shown in an indexed, three-color catalog of 32 pages and cover, size 11 x 15 1/4 inches. These are: residential stokers, oil burners, gas burners, automatic furnaces and boilers, commercial and industrial oil burners, and commercial and industrial stokers.

Pages are devoted to each of the seven lines, their various parts and features, with installation pictures in color. A page is devoted to the Iron Fireman organization with pictures of their Cleveland, Portland and Toronto plants.

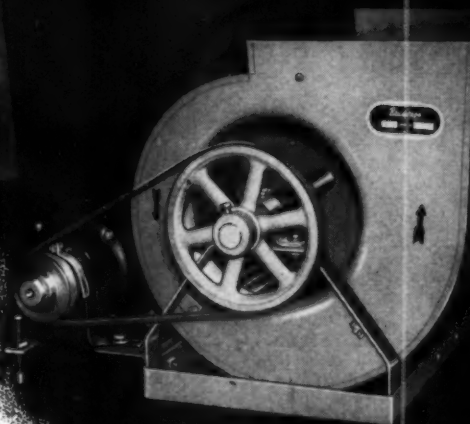
The book stresses that "There's an Iron Fireman for Every Home Heating Need."

Iron Fireman Manufacturing Company, 4784 S. E. 17th Ave., Portland, Oregon and 3121 W. 106th Street, Cleveland 11, Ohio.

There is more
than meets the
EYE in

BUYING BLOWERS

In selecting a blower consider not only engineering features and construction of the blower itself, think also of the reputation of the company from whom you purchase it. With materials short, have they been fair in their allocation? Have they done their level best to hold prices down and maintain your profit? Have they been co-operative and helpful in emergency situations and on special developments? You will find these added values, beyond the merchandise itself, when you buy from Brundage. Brundage offers you the combination that assures complete customer satisfaction; the best engineered blower available today, fine workmanship by craftsmen who know how to be careful, and fullest cooperation. When next you think of blowers remember, Brundage Is A Better Buy.



THE
Brundage
COMPANY

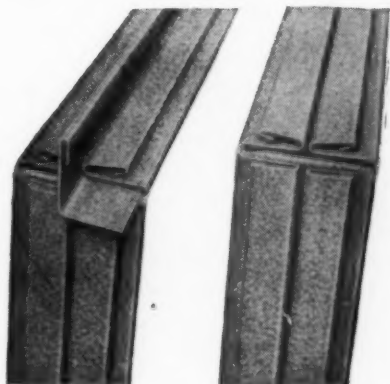
*Blower Specialists
Since 1919*

508 NORTH PARK STREET
KALAMAZOO 11, MICHIGAN

Save yourself TIME and MONEY

Order Furnace Fittings from

"Made-Rite"



INVESTIGATE MADE-RITE CONNECTING LOCK STRIP

Patent Pending
Here's a time and material saver for speedy and air tight installations of trunk line and wall stack fittings with all the "Know How" of years of experience in the manufacture of precision "Made-Rite" fittings. Write for complete details today and you will receive our prompt attention.

NO JOB can be better than the fittings you use and no fittings can be better than ours. We've always made a conscientious effort to supply the finest fittings and get them out to our customers with a minimum of time and trouble.

You'll find that dealing with us will be a pleasant and profitable experience. We have a complete line of fittings and accessories to meet your every need and we're sure you'll agree that one order will lead to many more.

Wholesale jobbing inquiries respectfully invited and will receive our usual prompt attention.



"Made-Rite" Co., Inc.

10th & Monroe St. Newport, Ky.

SMALL HOME BUILDERS

check
this...



SOLUTION TO SPACE PROBLEMS the new CM-85

WINTER AIR CONDITIONING OIL FURNACE

- ✓ Especially designed to utilize smallest possible space.
- ✓ One piece furnace construction.
- ✓ Jacket prefitted at factory for quick on-the-job mounting.
- ✓ Wool fiber glass insulation traps heat for efficient, uniform circulation.
- ✓ ENTIRE INSTALLATION REQUIRES LESS THAN ONE DAY!
- ✓ Jacket height 47½", width 20½", length 40½". Output 85,000 BTU. Unit complete with blower, motor and filter.

Fired with the
AMAZING P. C. OIL BURNER
(Precision Combustor)

This famous new fuel saving burner is licking the oil burner buyer's resistance all over the country. Immediate delivery. Also available in 100, 150 and 200,000 BTU capacities.

GENERAL Automatic

Check FIRST . . . with the FINEST
GENERAL OIL BURNER CORP.
2300 Sinclair Lane, Baltimore, Maryland

Est. 1924

NEW LITERATURE

Use the Coupon on Page 111

Fractional HP Motors 271

Triple Protected Motors with the Amazing Syncro-snap Switch is the title of a bulletin describing the line of F. H. P. motors. Types are SI, high load capacity; Type CSI, capacitor start; and Type P, polyphase motors.

Features are the Syncro-snap starting switch and the Temprotex thermostatic overload protector.

Horsepower ratings include 1/6, 1/4, 1/3 and 1/2, with special ratings offered on application.

Torq Electric Corporation, 1002 Interstate St., Bedford, Ohio.

Forming Stainless Steels 272

Forming of Austenitic Chromium-Nickel Stainless Steels (price \$4.00) was compiled to give fabricators of metal equipment a better understanding of the adaptability of stainless steels to all modern processes of forming. This book presents a detailed description of the modern forming procedures as applied to chromium-nickel stainless steels and as practiced in the fabrication plants of the United States. Bending and straight flanging; forming of curved sections and tubing; deep drawing; die forming; forming of contoured-flanged parts, and forming by miscellaneous methods are some of the methods discussed in the book.

The specific examples of forming technique are supplemented by details of tool design and tool materials, lubricants, data on dimensions, and consecutive steps in fabrication.

The International Nickel Company, Inc., 67 Wall Street, New York 5, N. Y.

Galvanizing Methods 273

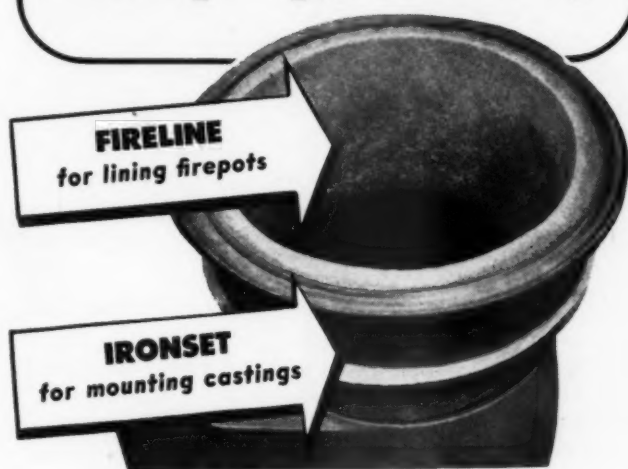
Hot-Dip Galvanizing Practice, by W. H. Spowers, Jr., second edition (price \$6.00) is written in non-technical language and discusses the latest, most improved and efficient galvanizing methods. It contains 23 chapters describing in detail various steps involved in galvanizing straight and tightcoat wire, poultry netting, hardware cloth, pipe, pipe fittings, sheets, stamped metalware, range boilers and barrels.

The procedure to be followed in building a typical modern galvanizing plant is presented in detail. Such phases as electrically-heated kettle settings, pyrometry, how to reduce dross losses, types and chemical reaction of fluxes, and other subjects will be valued by manufacturing galvanizers and their metallurgists, chemists and shop personnel.

There is also a history of galvanizing.

The Penton Publishing Co., 1213 West Third St., Cleveland 13, Ohio.

Renew cracked firepots without delay—profitably



No need to dismantle the furnace or wait for castings. With Fireline and Ironset, the complete renewal job can be done in a few hours. The profit margin is high—and you can do a lot of jobs, fast. Best of all, you build business and reputation because Fireline and Ironset give your customer a better job.

FIRELINE is a plastic refractory material for lining firepots. It protects and preserves good castings; seals all cracks and holes in burned-out castings—prevents leakage of gas, odors, and dirt through the firepot. After baking out, Fireline withstands 3000 deg. F. Easily installed through the fire door—no new castings; no dismantling the furnace. Sold in 50 and 100-lb. drums; also in 5 and 10-lb. cans (60 lbs. per case).

IRONSET is highest-quality cement for setting up new furnaces and recementing old ones. You'll never know real cement until you try Ironset. Made by refractory manufacturers, it withstands higher temperatures without cracking or shrinking, bloating or blistering. Order a case of Ironset and try one can. If you don't agree that Ironset is the best furnace cement you have ever used, return the unused portion and get *double* your money back. Sold in 50 and 100-lb. drums; 5 and 10-lb. cans (60 lbs. per case); and 1-lb. cans (36 lbs. per case).

and FIRE-HEARTH, too!



Here's another good Fireline product. This castable refractory is ideal for setting stokers, for forming precast combustion chambers and baffle tile. Just mix with water, pour into place, and trowel smooth. Sold in 50 and 100-lb. bags.

Fireline heating specialties are stocked by leading jobbers everywhere. For better jobs—for better reputation—use these better materials. Write for literature, prices, and discounts.

FIRELINE

STOVE & FURNACE LINING CO.

1816 Kingsbury St., (Dept. F), Chicago 14, Illinois

AMERICAN ARTISAN, June, 1948

ROLLED STEEL ANGLE RINGS



Also Channels • Tees • Bars • Rounds
and Shapes Rolled To Any Radius
To Your Specifications



Take the work out of sheet metal pipe assembly and get a better, tighter job with Chicago Metal Rolled Steel Angle Rings. They are **ROLLED RITE** assuring accuracy in all dimensions, uniformity in curvature, eliminating all distortion. The smooth face on each ring makes for a tight joint. A big time and effort saver on exhaust, fume disposal, dust-collecting, and ventilating installations.

Write for list of sizes and net price list.

Also Sheet Metal and Heating Supplies

- * Moncrief Furnaces
Coal — Oil — Gas
- * International 85 - 150 Oil
- * Oil Burners - 275 Gal. Oil Tanks
- * Oil Gauges - Oil Filters - Oil Lifters
- * Blowers - Humidifiers
- * Master Blowertrol - C. A. C.
- * Controls
Minneapolis-Honeywell • Sampsel
- * Western Turbine Ventilators
- * Accurate Ventilators
- * Conductor Elbows - Mitters - Etc.
- * Glatt Gutter Anchors - Wire Hangers
- * Sheet Copper Cold and Soft Rolled
- * Blow Pipe Ells - Blast Gates

Complete Catalog and Net Price Sheet
on Request.

CHICAGO METAL MFG. CO.

3733 S. ROCKWELL STREET, CHICAGO 32, ILLINOIS

SEPTIC TANKS



Two Sizes . . . 300 and 500
gallon capacity. 14 Gauge
Steel, Black Asphalt coat-
ing.

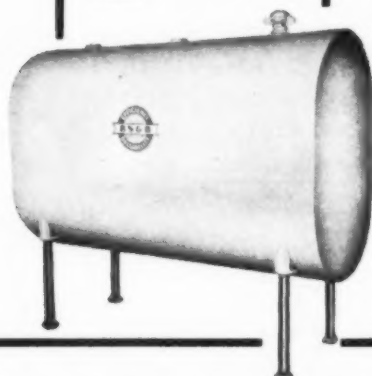
AVAILABLE FOR DELIVERY!

Top quality steel tanks, fabricated by a manufacturer with over 55
years' experience. Write today for prices and complete delivery in-
formation.

BLACK, SIVALLS & BRYSON, INC.

24th Floor, Power and Light Building,
Kansas City 6, Missouri

Capacity, 275 gallons. 14
gauge black steel, or alumi-
num. . . . Legs not in-
cluded.



BASEMENT TANKS

NEW LITERATURE

Use the Coupon on Page 111

Metal Ceilings Available 274

Popular patterns in metal ceilings are available for immediate delivery.

In addition to offering a decorative effect, metal ceilings are to a great extent fire resistant.

Information and prices are available.

Klauer Manufacturing Company, 9th & Washington St., Dubuque, Iowa.

Pre-Plated Metals Booklet G 275

A booklet featuring the use of pre-plated Nickeloid metals has just been issued.

The booklet is illustrated with photographs of products large and small which utilize these modern metals for decorative trim or for functional use. These applications range from the small metal tube clips or sifter tops to entire toys and electrical appliances using pre-plated Nickeloid metals almost entirely in their design.

Nickeloid metals are offered in sheets, in coils, and in round edge flat wire—plated one or both sides in bright or satin finish or in colorful tints, and in attractive patterns.

A number of pages are devoted to listing the physical properties of the various metals in the line; also listed are sheet sizes, tempers, gauges, and a handy table of decimal weights.

American Nickeloid Company, Peru, Illinois.

Five Basic Tools 276

A line of five tools with accessories for sheet metal fabrication, engineered for small, accurate work in lighter gauges, are covered in a 16-page booklet. Through words and pictures the booklet introduces each tool, and gives basic instructions in the use of each. After these simple steps, projects are suggested by drawings in the booklet, in some cases plans are provided, complete with dimensions and instructions.

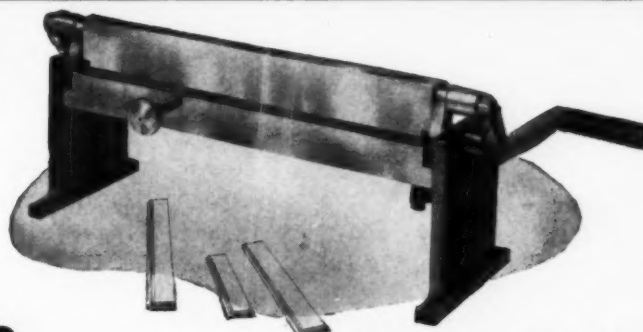
Finally, in the back of the booklet, are plans and instructions for making a Colonial lamp. "Know-how" tips are given.

The nibbler, the brake, the shear, the slip roll and the hand punch are mounted on a heavy stand and require little space, yet will handle sheet metal fabrication including cutting, bending, rolling, punching and scrollwork.

Standard Sheet Metal gauges (US) for sheet metal and plate iron and steel are given on the inside cover. The final page lists books offering valuable information to metalworkers.

Berkroy Products, Inc., 2516 N. Ontario St., Burbank, Calif.

YOU'VE BEEN WAITING
for THIS!



Available up to 36 inches in length
Pat. Applied For
Announces

Riverside The "S" Clipper

Over-and-Back-ONCE! — and You've Got a Perfect "S" Clip

And that's the main story except that it is a simple, sturdy machine that will last for years with practically no upkeep. An average operator can easily turn out 4 to 5 hundred clips per hour. You can't afford to be without it.

Better write for full information today

SHAKOPEE

RIVERSIDE MACHINERY CO.

MINNESOTA

Extra Profits In Blower Installations
with

Vent-Air

General Purpose
**CAST ALUMINUM
UTILITY BLOWERS**



V-5—6" (less motor) - - - \$19.00 Net
V-10—7" (less motor) - - 24.00 Net
V-20—9" (less motor) - - 36.00 Net

SIZE	INLET	OUTLET	WHEEL DIA.	CFM	REC RPM	REC HP
V-5	6"	6"	6 1/4"	550	1750	1/4
V-10	7"	7"	7 1/4"	1180	1750	1/2
V-20	9"	9"	9 3/4"	2280	1750	3/4 or 1

Blowers are of light weight, sturdy, cast aluminum—non-sparking. Standard diameter inlet and outlet—fit stock size pipe. Adjustable base—fits any standard motor. Adjustable discharge—rotates to four positions. Wheel statically balanced.

We Can Supply Motors for Each Unit, if Desired

MAXIMUM AIR DELIVERY • MINIMUM OVERALL SIZE AND WEIGHT

Installed with used or new motors—VENT-AIR provides a compact, efficient blower set that permits you to make a good profit for your time and trouble. Order a VENT-AIR today. Send purchase order or cash. Shipped F.O.B. Detroit.

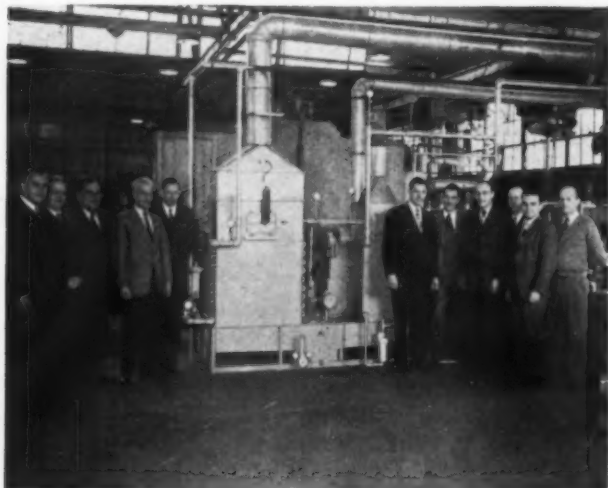
Fried Air-Kool Co.

8205 LYNDON
DETROIT 21, MICH.

WITH THE MANUFACTURERS

SALES ENGINEERS AND SERVICE PERSONNEL of the Kathabar Division, Surface Combustion Corporation, inspected the new Model B Kathabar Package Unit for Humidity Control in Air Conditioning, in the company research laboratory in Toledo, Ohio, while attending a recent sales-engineering meeting.

The new unit operates on the same principle of absorption as the previous Model A Package Unit; however, the Model B unit is much more compact in de-



sign and is erected and disassembled by sections to facilitate the unit being moved through doorways and common openings in buildings.

Sizes are available from 1,350 cfm to 5,000 cfm of air.

Reading from left to right—E. A. Windham, eastern district manager, New York City; F. M. Johnson, in charge of the Air Conditioning Division, Toledo; John Hopping, F. J. Evans Engineering, Houston; R. P. Thompson, Laboratory Research, Toledo; Mark Linn, Kathabar Service, Houston; Howard Rahm, service engineer, Toledo; John Hawk, F. J. Evans Engineering, Birmingham; Gilbert Kelley, chief engineer, Kathabar Division, Toledo; Dale Valentine, sales engineer, Toledo; David Levinson, sales engineer, Toledo; and Harry Ross, engineer, Toledo.

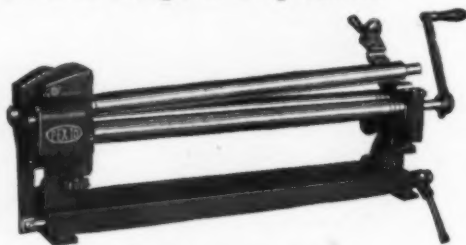
NEW SALES REPRESENTATIVES have been appointed by the Fitzgibbons Boiler Company, Inc., 101 Park Avenue, New York, N. Y.

The A. S. Nugent Company of Washington, D. C. will represent Fitzgibbons in that area. Mr. Arthur Nugent, its principal officer, is well known in the heating industry, which he has been associated with since 1916. During the war years he was Deputy Administrator of the Plumbing & Heating Division of the War Production Board. Prior to the war he had been associated with the American Radiator Company and the H. B. Smith Company, as well as other companies in the contracting and sales representative end of the heating business.

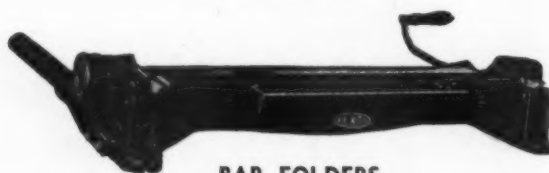
In the Columbus, Ohio area, Fitzgibbons will be represented by the Lynn Company which has a long record of heating sales in that section of the country.

SPECIFY PEXTO EQUIPMENT FOR ALL SHEET METAL WORK

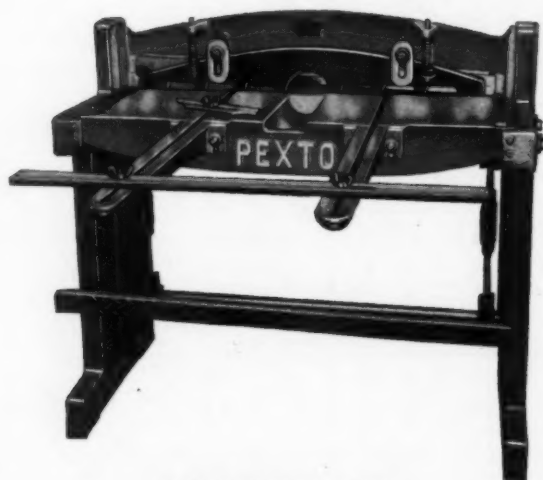
"TOPS" in the industry — the line today includes many refinements in design and operation.



SLIP ROLL FORMERS



BAR FOLDERS



SQUARING SHEARS

17PX48

THE PECK, STOW & WILCOX COMPANY — Since 1785 — SOUTHLINGTON, CONNECTICUT, U. S. A.

KOPPERS Plastipitch* Protected Metal Advertising

*is helping to build
your business*

TO PUT IT UP economically
A building of Koppers Plastipitch is built with more economy than any other building material.

TO PUT IT UP permanently
With the Koppers Plastipitch method of painting, metal buildings are protected from weather, salt water, and rust.

TO PUT YOUR BUILDING UP fast
A building of structural steel with Plastipitch Protected Metal and aluminum can be erected much more rapidly than one of masonry or brick.

TO KEEP IT flexible FOR PROCESS CHANGES
A building erected with Plastipitch can be altered, enlarged, or taken down and moved to a new location, if process change.

PLASTIPITCH PROTECTED METAL

Plastipitch Protected Metal is backed by six years of industrial applications, and by thirty years of Koppers experience in the manufacture of steel for roofing and siding of industrial buildings. Send for this manual which tells recommended methods of which tells recommended methods of erection, and the help you can get from Koppers on detailing special shapes, gables, downspouts, flashings and other accessories for a Plastipitch building.

KOPPERS COMPANY, INC.
Pittsburgh 19, Pa.

KOPPERS COMPANY, INC., Pittsburgh 19, Pa.
Please send me free copy of your manual on Plastipitch Protected Metal.

Name _____
Address _____
City _____ State _____ Zip _____

Koppers is building a fast-increasing market for its new product, Plastipitch Protected Metal roofing and siding . . . through national advertising in factory, chemical, engineering, railway and other trade papers and magazines.

This means added business for you. For Koppers does not do erection work. Its Plastipitch jobs are handled through sheeting contractors.

Koppers maintains through its approved distributors, warehouse stocks of Plastipitch Protected Metal in each major trading area. This makes it easy for you to obtain sheeting locally and quickly. Send for the engineering manual on Plastipitch Protected Metal.

KOPPERS COMPANY, INC.
Department 612T
Pittsburgh 19, Pa.

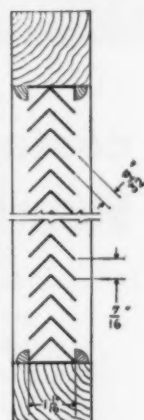
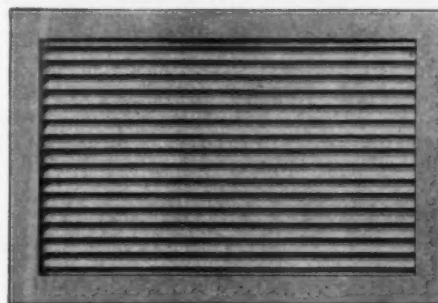


*Reg. Trademark, U. S. Pat. Off.

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You can't see through **INDEPENDENT**

NO-VISION GRILLES for Doors, Walls and Partitions



...BUT YOU CAN SEE Extra Profit Opportunities with the Complete Line of Independent Registers and Grilles



Where ventilation without vision is desired—in doors, walls and partitions—Independent No-Vision Grilles meet every requirement. It's impossible to see through an Independent No-Vision Grille from any viewpoint.

Independent No-Vision Grilles are made in two styles—Style C, with grille core only, installed with molding as shown above; Style R, with overlapping rim on all four sides of one surface of the grille, as illustrated at the left.

Independent No-Vision Grilles are made in 46 standard sizes, for openings from 8"x 6" to 30"x 24", and additional sizes can be furnished.

SEND FOR THIS BOOK

Write for new Catalog No. 48—gives schedules of sizes, details and prices of registers and grilles for every purpose.



Always Leading — Always Progressing

**THE INDEPENDENT
REGISTER CO.**

3747 E. 93rd STREET • CLEVELAND, OHIO



... Tell that to your customers — show them Swartwout JECT-O-VALVE

This modern powered roof ventilator clears out masses of heat, smoke and fumes from foundry, glass plant, forge shop, heat treatment rooms and other industrial buildings. You can recommend them for concentrated heat spots such as over vats, furnaces, pouring floors, etc. Ject-O-Valve is a powerful "straight-through" ventilator with many im-



provements, including convenient hinged top for easy servicing. You can lick any problem you are called upon to solve with one of the 28 different capacities. Write for more complete information.

6 Types of Swartwout Ventilators to Help You Increase Your Business

It's easier than ever before to sell modern roof ventilation. Swartwout Equipment supplies complete *natural* (gravity), or forced roof ventilation as needed. You can apply one or more Swartwout Ventilator types to factories, warehouses, garages, airport buildings, bus terminals, power houses—wherever hot foul air conditions exist. Write for Bulletin 324 describing the full Swartwout line.

The Swartwout Company
18615 EUCLID AVENUE • CLEVELAND 12, OHIO



WITH THE MANUFACTURERS

A NEW EDUCATIONAL SHOW designed as a service to heating engineers and service men will "hit the road" the latter part of June with the first stop scheduled at Spokane, Washington on June 21, according to M. E. Henning, executive vice president and general manager of Penn Electric Switch Co., Goshen, Indiana.

This show was created to give a dramatic visual demonstration in the use, construction, installation and servicing of automatic controls. Included in the elaborate equipment are giant controls which actually operate, colored slides, and charts.

Penn has had considerable experience in creating and staging educational meetings of this nature. Before the war, the company pioneered demonstration shows with the objective of improving service to the consumer by education of the service man. The war period, however, made it necessary for Penn to discontinue these meetings until the present. Thus, the current show is a revival of previous ones but is entirely new from stem to stern.

HARVEY-WHIPPLE, INC., manufacturers of Master Kraft oil heating and air conditioning equipment, has announced the appointment of Mr. Bennett T. Church of Muncie, Indiana, as factory representative covering the states of Indiana and Michigan. Mr. Church has traveled those states for a wholesale hardware firm, selling and servicing heating equipment, and is, therefore, well known to oil heating dealers in that area.



B. T. Church

THE CLEAN SWEEP Co. of South Lansing, Michigan has announced a number of new manufacturers' representatives, as follows:

F. M. Eversden & Associates, Inc., 535 Chestnut St., Philadelphia, Pa.

T. A. Cunningham, Buffalo Heating Service, 182 Lancaster Ave., Buffalo, N. Y.

John Hammond, Jr., 101 Park Ave., New York, N. Y.

Bell Pump Service, Hartford, Connecticut, Springfield, Mass., and New Haven, Connecticut.

D. C. Timmons & Son, 322 N. McDowell St., Charlotte, N. C.

Granse Corporation, 1954 University Ave., St. Paul, Minn.

Nelson Supply Co., 251 Central Bldg., Seattle, Washington.

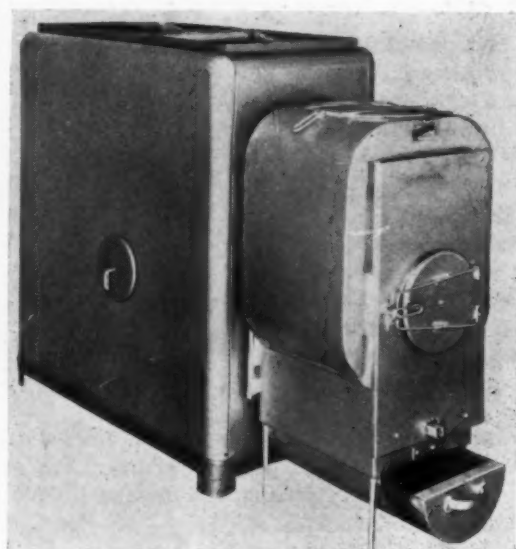
Phillips Steel Co., Albuquerque, New Mexico.

E. G. Koyl, 5 Post Office Bldg., Winter Park, Fla.

W. W. Watson, 2970 W. Grand Blvd., Detroit, Mich.

TJERNLUND "QUICK HEAT" LEADS THE WAY!

Announcing A New Addition to Our Growing Line



COAL AND OIL IN ONE UNIT WITH EXCELLENT RESULTS

FEATURES:

With our efficient hopper fed coal attachment coal can be used with "Quick Heat" units without removing the oil burner.

Both coal and oil can be burned simultaneously or separately with equally efficient results. In case of power failure or on new construction coal unit can be attached and will provide adequate heat with "Quick Heat's" excellent gravity circulation.

Our coal unit has vital parts constructed of high grade heat resistant stainless steel.

We also manufacture ceiling and wall hung industrial oil burning units in sizes up to 700,000 Btu's.

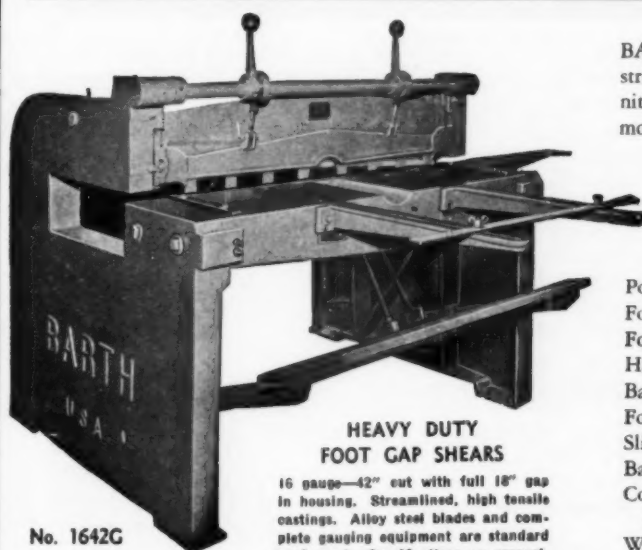
WRITE FOR LITERATURE AND INFORMATION

Manufactured by .

The TJERNLUND MFG. CO. 2140 KASOTA AVE., ST. PAUL 8, MINN.

BARTH

MODERN METAL WORKING EQUIPMENT



HEAVY DUTY FOOT GAP SHEARS

16 gauge—42" cut with full 16" gap in housing. Streamlined, high tensile castings. Alloy steel blades and complete gauging equipment are standard equipment. Specifications on request.

No. 1642G

BARTH sheet metal working tools keep step with every major stride of the industry. When you install one, you make a definite contribution to progress. You meet a modern need with a modern tool! Write for latest catalog.

PRODUCTS

Power Squaring Shears
Foot Squaring Shears
Foot Gap Shears
Hand Bending Brakes
Bar Folders
Forming Rolls
Slitting Shears
Bar and Rod Shears
Combination Deep Throat
Bench Machines
Wiring Machines

Edging Machines
Turning Machines
Burring Machines
Flanging Machines
Crimpers and Beaders
Brace and Wire Benders
Bench Plates
Cast Iron and Steel Stakes
Rivet Sets
Hand Groovers

THE BARTH MANUFACTURING CO., MILDALE, CONN., U.S.A.

WITH THE MANUFACTURERS



H. W. BURRITT, (seated) president of the Eureka Williams Corporation, Bloomington, Illinois, checks over export market problems with (left to right) W. A. Matheson, manager of the Williams Oil-O-Matic Division of the corporation, and Captain Filip Sloor, Captain Olof Tillquist, and Charles P. Jensen, representatives of Ingenlorsfirma Hugo Tillquist, Swedish dis-

tributors of the oil burners and vacuum cleaners manufactured by Eureka Williams. According to Captain Tillquist, leader of the group, "the market for oil burners and cleaners in Sweden can be expected to steadily improve."

CRISE MANUFACTURING COMPANY, Columbus, Ohio recently announced the appointment of J. K. Farrar as Sales Manager. The company makes the well known line of Crise heat controls for use on hand fired furnaces.



J. K. Farrar

Mr. Farrar is a graduate of Ohio State University where he majored in metallurgical engineering. Following college was employed by the American Rolling Mill Company in Middleton, Ohio until joining the U. S. Navy in 1942. Immediately preceding his present position, Mr. Farrar was with the Eagle-Picher Sales Company, Cincinnati, Ohio as a sales engineer.

In commenting upon Mr. Farrar's appointment Mr. Maxwell, president, said that this completes the reorganization of the Crise Company that was undertaken when the firm started operations under new management in June, 1947.

Home Owners' Favorite



THE FAMOUS ROUND OAK MOISTAIR BLENDED-IRON "J" SERIES FURNACE

A great favorite with thousands of home owners for years, the Round Oak Moistair Blended-Iron "J" Series Furnace is always in demand, always good for your business. This moderately priced, top-quality unit is engineered to provide an abundant supply of warm, moist, dust-free, gas-free air with exceptional economy of coal. Diamond-shaped, one-piece radiator assures delivery of more heat; oversize water reservoir gives added humidity protection, and there are many other outstanding features.

Round Oak manufactures a complete line of efficient, dependable warm air furnaces, including both blended-iron and boiler-plate steel units—for coal, coke, oil and gas.

REPAIR PARTS

Repair parts are immediately available for all Round Oak furnaces now in service.

Write for information on the entire line today.

ROUND OAK CO., INC., OF INDIANA • DOWAGIAC, MICHIGAN

Furnaces • Oil Burners • Air Conditioners • Ranges



NOW AVAILABLE

A complete reprint, under one cover, of Professor S. Konzo's invaluable series of articles —

The "HOW, WHAT AND WHY" of the New Winter Air Conditioning Manual

Everyone who is now using or expects to use the new "Code and Manual for the Design and Installation of Warm Air Winter Air Conditioning Systems" will find Professor Konzo's series a source of much practical help in understanding the Code and correctly applying it to actual jobs. In this great series, Professor Konzo not only explains step by step exactly how to use the Code, but, in addition, tells in detail of the research and experience that is behind each step in the suggested procedures.

Price — Only \$1.00 per copy

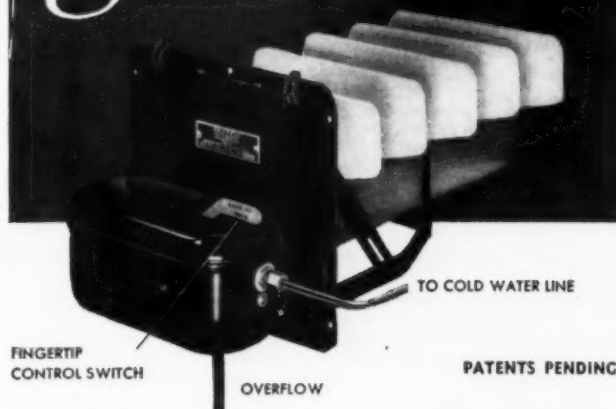
AMERICAN ARTISAN

6 NORTH MICHIGAN AVE.

CHICAGO 2, ILLINOIS

AMERICAN ARTISAN, June, 1948

There's SALES APPEAL PLUS
in the NEW
Skuttle SERIES 600!



SELF-FLUSHING! SELF-CLEANING! QUICKLY, EASILY INSTALLED!

No doubt about it, the new Skuttle Series 600 is a "natural" for you . . . an all-purpose automatic humidifier that's loaded with quality features.

SELF-FLUSHING, SELF-CLEANING—Right! This new Skuttle unit takes the curse off cleaning. Just raise the fingertip control switch and Skuttle's exclusive vacuum-controlled cleaning system does the rest . . . flushes the entire unit, drains off all water, sludge, mud and mineral deposits, then refills again automatically. No hand scraping required! Other important features include drawn seamless copper pan (3" x 12"), five replaceable Vapoglas plates having 316 sq. in. evaporating area, automatic anti-siphon float control valve.

QUICKLY, EASILY INSTALLED—Just one hole in the plenum . . . that's all it takes to install the new Series 600! No rear supports needed! No clean-out panels required! Entire unit quickly removed for simplified, convenient servicing.

FLEXIBLE, ALL-PURPOSE UNIT—Keep your inventories at a minimum with the Series 600! It meets most humidifying requirements and it's adaptable, too, in sloping bonnets or straight plenums of both gravity and forced air furnaces. Just one unit to carry in stock!

**VAPOGLAS PLATES MEAN
REPEAT PROFITS FOR YOU!**



For top efficiency, evaporating plates should be replaced once each heating season. And Skuttle's patented Vapoglas plates can bring you this yearly repeat business from every installation you make. They absorb 70% more water per pound than ordinary ceramic composition plates assuring maximum moisture output.

Cash in on the new Skuttle Series 600 . . . and keep on cashing in year after year with Skuttle's exclusive Vapoglas evaporating plates! See your local jobber now . . . or write today for state listings and the complete Skuttle Profit Story!

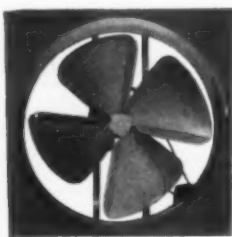
Skuttle
MANUFACTURING CO.
4099 BEAUFAIT
DETROIT 7 MICHIGAN

Sell them SUMMER COMFORT

The **FRESH-AIR-MAKER** Line

**OFFERS MOST ATTRACTIVE TYPES AND
VALUES TO GET THE BUSINESS**

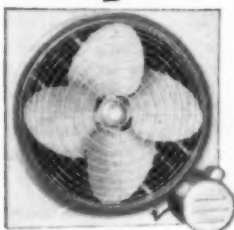
You will need the best there is in quality, performance and design for 1948, and all at a reasonable price. Schwitzer-Cummins Fresh-Air Maker fans and Hy-Duty Blowers can't be beat for big air delivery, quiet operation, selling features and looks.



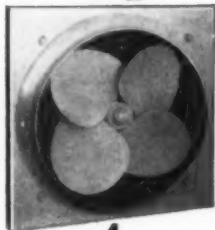
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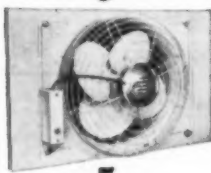
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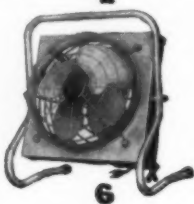
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5



6



7

- 1 Attic Ventilators
- 2 Centrifugal Blowers
- 3 Window Fans
- 4 Exhaust Fans
- 5 Adjustable Window Fans
- 6 Portable Fans
- 7 Single Inlet Blower

IMMEDIATE SHIPMENT

Investigate... Widen your line... Boost your profits... New literature

SCHWITZER-CUMMINS COMPANY
Ventilating Division

1145 EAST 22 STREET • INDIANAPOLIS 7, INDIANA

Builders of Fine Fans for 30 Years

WITH THE MANUFACTURERS

THE PERFEX CORPORATION, manufacturer of automatic temperature controls and industrial engine radiators, has announced the appointment of Allen A. Putt as eastern sales representative for the Controls Division and Alfred B. Meeg as manager of the Industrial Controls Division.

Putt has had 25 years experience in the controls industry, having been manager of the New York Office of Detroit Lubricator Company from 1925 to 1940. For the last two years he has been manager of Commercial Sales for the Friez Instrument Division of the Bendix Aviation Corporation. In his new capacity Putt will operate from the company's New York Office as a special sales representative.



A. A. Putt



A. B. Meeg

Meeg is a Mechanical Engineering graduate of the University of North Dakota. Following graduation he joined the Westinghouse Electric Manufacturing Company and worked with them for four years. In 1930 Meeg joined the Iron Fireman Manufacturing Company in their Chicago branch. In 1936 he was transferred to the Milwaukee branch and became branch manager in 1938 which position he has held to this time. He is a member of ASME, the Engineers Society of Milwaukee and is registered in the State of Wisconsin as a Professional Engineer. Mr. Meeg is successor to M. W. Crew who left Perfex Corporation to enter his own business.

W. C. BRANDAU has been appointed district manager of Airtherm Manufacturing Company in charge of sales and application of Airtherm Products in the northern Illinois territory, with headquarters at 1324 West Fulton St., Chicago. Mr. Brandau has a background of many years experience in the heating equipment field.

The company has also announced the recent appointment of the following district representatives:

Morton McI. Dukehart & Co., Baltimore, for Maryland and District of Columbia.

Wm. H. Dwyer, Jr. & Co., Indianapolis, for western and southern portion of Indiana and state of Kentucky. Pacific Electric Sales Co., Portland, for Oregon, Washington, Idaho and western Montana.

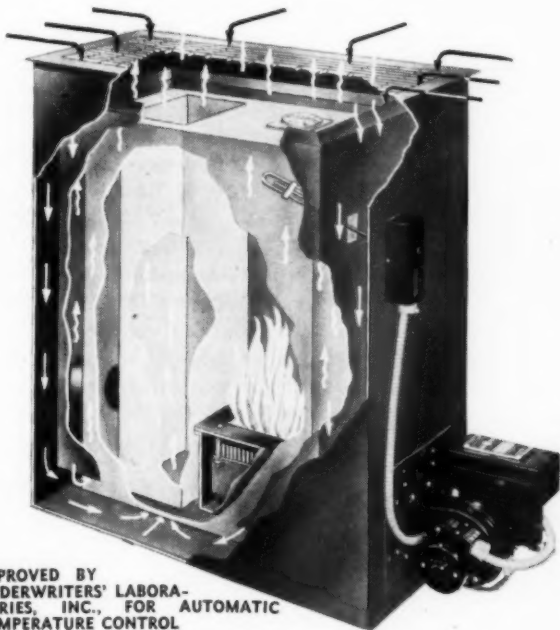
Pacific Engineering Equipment Co., San Fernando, for California, Arizona and Nevada.

Rittelmeyer & Co., Atlanta, for Georgia.

Bernard A. Thomas, Tampa, for Florida.

ROBERTS *Automatic Oil* FLOOR FURNACE

*The Last Word in
MODERN HEATING
for SMALL HOMES*



APPROVED BY
UNDERWRITERS' LABORA-
TORIES, INC., FOR AUTOMATIC
TEMPERATURE CONTROL

SPECIALLY DESIGNED BURNER, COVERED BY PATENT APPLICATION, THAT HAS A NON-IMPINGING FLAME, REDUCING CARBON TO A MINIMUM AND ELIMINATING THE NECESSITY OF CARBON CLEANING.

- BURNS NO. 3 OIL OR BETTER
- AVERAGE INSTALLATION 4 HOURS OR LESS (2 MEN)
- NO BASEMENT REQUIRED

Shipped as a complete unit . . . Automatic thermostatic control standard equipment. Model AK-101, 52,000 BTU. Width 14", Length 30", Depth 35". Flue Pipe 6" diameter. Draft required, .05" water column. Heavy steel electric-welded heat exchanger. Grill, oak finish. Rust and corrosion-resistant casing and air separator. Shipping weight 165 lbs. Draft booster blower.

*A Limited Number of
Dealer Franchises Available*

ROBERTS FURNACE
DIVISION OF BONE TOOL & GAUGE COMPANY
380 Twenty-Fourth St. Detroit 16, Mich.



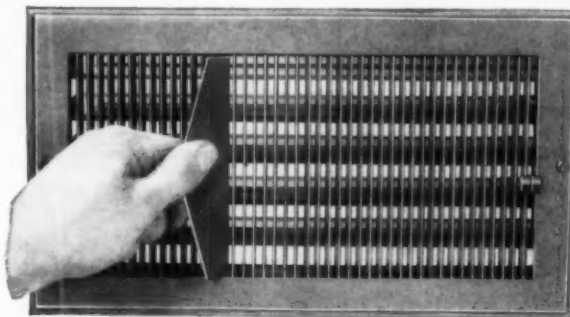
NOW YOU CAN GET THE BEST!

The day is practically here when you no longer have to be satisfied with unmatched register designs of short-line producers. Standardize on U. S. for outstanding beauty, efficiency, sensible prices, and lower installation costs.



No. 40 SERIES Gravity Baseboard

For today's smart new homes, or modernized old ones, this is the Ideal Register. With either gravity or converted-gravity forced-air systems its large "free area" gives perfect results. Removable grille . . . patented engaging buttons . . . no loose screws to be lost . . . definite savings on installation time.



No. 256 4-WAY FLOW AIR-CONDITIONING REGISTERS

The finest registers for your high class contracts. Functions perfectly in sidewall or ceiling with any direction of air approach. Multiple valves and grille bars can be set for any directional air-flow desired.

Send for latest Catalogs.

UNITED STATES REGISTER CO.
BATTLE CREEK, MICHIGAN
MINNEAPOLIS • KANSAS CITY • ALBANY

**Genuine Joe's
the guy who knows**



ALL ABOUT BEARINGS



Tests prove Steel-Backed, High-Tin, Babbitt-Lined Bearings Superior!

Pioneered by Wagner in 1927, steel-backed, high-tin, babbitt-lined bearings have proved superior both in laboratory tests and field performance. These steel-backed, high-tin, babbitt-lined bearings of prewar quality have been furnished for the past year. They withstand heavy pressure, resist seizure and shaft scoring and operate at low temperatures. That's why Wagner uses them exclusively in their famous fractional horsepower and smaller integral horsepower sleeve-bearing motors (203-505 frames).

Steel-Backed, High-Tin, Babbitt-Lined Bearings Come Ready to Install...

Wagner steel-backed, high-tin, babbitt-lined bearings come to you diamond-bored to a specific size—simply press in (*don't beat in*)—this causes buckling and upsetting of end of bearing) and re-assemble the motor. It is ready to run.

They are also available unbored for use on undersized shafts so that they can be line reamed to the desired size.

GET THEM WHERE YOU SEE THESE SIGNS

identifying the 450 Authorized Service Stations or Parts Distributors for Wagner Motor Replacement Parts. They are available for immediate delivery.



Write for **CATALOG MU-40**

Every repair shop needs one. It helps determine the catalog number and price of Wagner Motor Parts.



**6371 PLYMOUTH AVE.
ST. LOUIS 14, MO., U.S.A.**

ELECTRICAL AND AUTOMOTIVE PRODUCTS

WITH THE MANUFACTURERS

THE HEIL Co., Milwaukee, has announced the appointment of Wm. E. Simons as general sales manager of the company. Mr. Simons has been sales manager of the truck body and hoist division of the company for several years and now heads all six sales divisions.



W. E. Simons

Other executive appointments include: Harry F. Pugh, vice president in charge of sales and advertising; Arnold F. Meyer, vice president in charge of engineering; Joseph J. Rosecky, vice president in charge of manufacturing; J. F. Horn, controller, assistant secretary and assistant treasurer; Earl C. Gilmore, assistant treasurer; Allan E. Magee, assistant secretary of The Heil Co. and secretary of Arnold Dryer Company; Ed Fellows, Jr., director of purchases.

IRVING C. JACOBS has been elected vice president and general sales manager of Gilbert & Barker Manufacturing Company. In his new position Mr. Jacobs will be in charge of all sales activities, both domestic and export, of the West Springfield, Massachusetts concern. He was made a director of Gilbert & Barker in 1944. Since 1942 he has been serving as export manager. For ten years prior he was managing director of Gilbert & Barker Manufacturing Company (Australia) Pty. Limited. He is still a director of the Australian company.



I. C. Jacobs

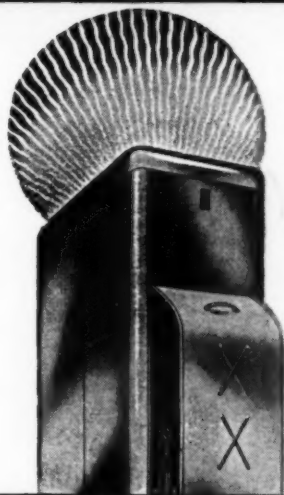


K. S. Edwards

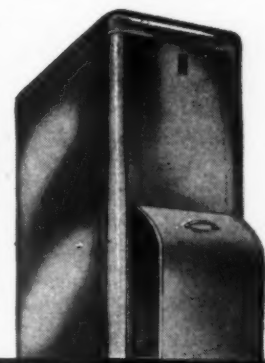
Other changes in the Gilbarco sales organization include the appointment of K. S. Edwards as assistant general sales manager. In addition, Lawrence Marchese is made manager, service station equipment sales, and P. D. Dingwell becomes manager, export sales. J. A. MacDonnell continues as manager, oil heating equipment sales. All are long time members of the Gilbarco sales department.

Gilbert & Barker manufacture the widely known line of Gilbarco products—gasoline pumps, air compressors, hydraulic lifts, automotive lubrication equipment, oil burners, and oil heating equipment.

WHEN YOU THINK OF HEATING EQUIPMENT —



OIL Quiet, Economical, Space Saving, Zeph-Air Oil Burning Furnaces, Easy To Operate, Easily Installed.



GAS Completely Automatic Air Conditioned Gas Furnaces With The Famous Gear Shaped Cast Iron Radiation Surfaces.



COAL You Buy Quality In Zeph-Air Coal Furnaces. No Costly Service Calls To Worry About.

Remember
XX CENTURY

ZEPH-AIR

With It's 54 Years of Engineered Efficiency in The Heating Field

It Pays To Push Zeph-Air Heating Products — Thousands of Satisfied Users All Over The Country Remember The Dependability And Reliability Their Zeph-Air Furnaces Stand For.

When a Zeph-Air Furnace Has Ended Its Long-Life and Is Ready To Be Replaced — The Customer is Almost Sure To Say — "Years of Uninterrupted Service," "Install Another Zeph-Air."

Cash In On This 54 Years of Customer Satisfaction — Stock Up On Zeph-Air Heating and Weather Conditioning Equipment — Now.

THE XXTH CENTURY HEATING & VENTILATING CO.

96 IRA AVENUE

AKRON, OHIO

More **BUSINESS** For You ...
More **SATISFACTION** For Customers

With **REX AIRATE** Window Fans

MORE satisfied customers mean more business for you. That's common sense. Top window fan performance backed by a trim appearance and attractive prices means more satisfied customers. That's common sense, too. And that's exactly what REX AIRATE offers you—as so many distributors and dealers already know.

Observe the smart lines, compactness, quiet operation and ease of installing and you'll choose REX AIRATE. *Because that's what your customers will choose.*

12 efficient models, ranging in size from a 14" window fan to a 50" exhaust fan, make it easy to meet any demand your customers may have. But for general needs, these three carefully-planned sizes make it easy to meet widely varying requirements.



W400 & 500

Made by the makers of Rex Blowers and Blower-Filter Units

AIR Controls, Inc.

DIV. OF
THE CLEVELAND HEATER CO.

2310 Superior Ave., Cleveland 14, O.

Model No.	Blade Size	Cap. C.F.M.	Weight Lbs.
W-16	16"	1300	20
W-400	24"	3900	50
W-500	28"	5100	55

Write for complete catalog information and prices today.



It's Available Now!

**The New
JOHN ZINK
"SHORTY"
FLOOR FURNACE**

50,000 Btu/hr.

A.G.A. Approved

— ONLY 26" DEEP —

This new No. 50 floor furnace is especially designed for installation where under-floor space is limited. Being only 26" deep, it can be installed where foundations are extremely low, eliminating the necessity of making a pit.

Burns Natural, LP and Mixed Gases

Write for Literature

John Zink Company

4401 South Peoria

TULSA, OKLAHOMA

New York - Salt Lake City - Houston - Los Angeles

WITH THE MANUFACTURERS

THE APPOINTMENT of W. W. Stuart of Des Moines, Iowa, as manufacturer's agent for Nu-Way products in Illinois, Iowa, Kansas, Missouri and Nebraska was announced by Nu-Way Corp., Rock Island, Illinois.



W. W. Stuart

Mr. Stuart entered the heating business in 1903, working first on controls. He turned his attention to oil burners in 1911, experimenting in design and operation. He made his first oil burner sales in the heating field and was issued a dozen patents on heating and control inventions. While thus engaged he became more active in the wholesale end of the heating business and a few years ago discontinued installation and servicing of burners and related equipment to develop his own jobbing business.

RAYMOND T. DOHERTY has joined the General Division of York-Shipley, Inc., manufacturer of automatic heating equipment, as supervisor of sales to manufacturers and national accounts.



R. T. Doherty

Mr. Doherty entered the heating industry in 1928 and has been prominent as a sales engineer and sales executive. In 1942, he volunteered for the U. S. Army Air Forces and served until 1946 in the European theatre. He is a Lieutenant Colonel in the Air Reserve.

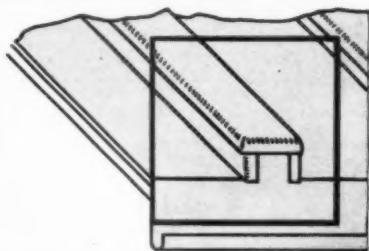
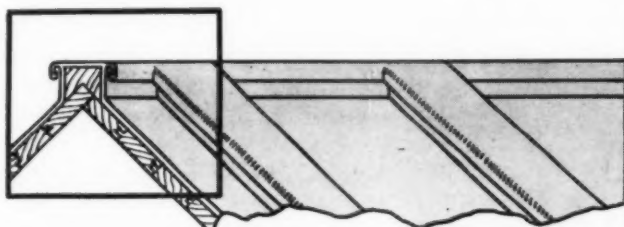
HOWARD C. WILLIAMS, since 1940 sales manager of the merchant trade division of Continental Steel Corporation, Kokomo, Indiana, has been named sales manager of the sheet division of the company, it has been announced by Edmond P. Severns, vice-president in charge of sales.



H. C. Williams

Mr. Williams became connected with the company in 1934, shortly following which he was made district sales representative. He served in that capacity until 1939 when he was named assistant sales manager of the company's merchant trade division, later being chosen sales manager of this division. The new position he now holds is one which remained vacant during the war years, Mr. Severns said.

**eliminate cross-seams
in batten roofs
using
FOLLANSBEE
SEAMLESS TERNE ROLL ROOFING**



Details showing application of Follansbee Seamless Terne Roll Roofing to Ribbed Seam Roof.

Your next roof maintenance or repair contract is just the place to try Follansbee Seamless Terne Roll Roofing—just the way to find out how the elimination of cross-seam soldering speeds up installation.

You'll find out, too, that it's easy to handle Follansbee Seamless Terne Roll Roofing regardless of the roof design or seam specification.

It will pay to use Follansbee Seamless Terne Roll Roofing with its time-saving advantages.

FOLLANSBEE STEEL CORPORATION

GENERAL OFFICES • PITTSBURGH 30, PA.



Sales Offices—New York, Philadelphia, Rochester, Cleveland, Detroit, Milwaukee. *Sales Agents*—Chicago, Indianapolis, St. Louis, Kansas City, Nashville, Houston, Los Angeles, San Francisco, Seattle; Toronto and Montreal, Canada. *Plants*—Follansbee, W. Va. and Toronto, Ohio. **FOLLANSBEE METAL WAREHOUSES:** Pittsburgh, Pa., Rochester, N. Y., and Fairfield, Conn.

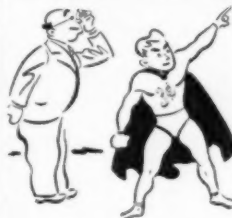
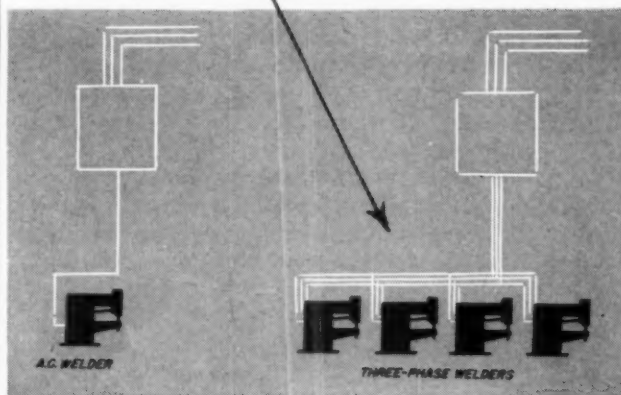
COLD ROLLED STRIP • POLISHED BLUE SHEETS • ELECTRICAL SHEETS
SEAMLESS TERNE ROLL ROOFING

AMERICAN ARTISAN, June, 1948

want to get

**4 times as much
welder capacity**

on your same power
distribution facilities?



Mighty "Three-Phase" is pointing out to Mr. Widget how he can install four times more resistance welding load without adding to his plant power distribution facilities. It's simple...all he does is install the revolutionary Sciaky "THREE-PHASE" welders! "THREE-PHASE"

is an achievement in power efficiency that compensates for the high intermittent loads encountered with most resistance welding jobs. It actually allows him to do the same welding job with only $\frac{1}{4}$ the current required by an ordinary A.C. welder!

Further, he gets a *balanced load* on all three phases of his supply. And his power supplier is happy because the machines operate on better than 80% power factor. He's happy because he can get Sciaky "THREE-PHASE" welders in big and little sizes—in spot, seam or projection models.

How Mr. Widget became a "Man of Success" is lucidly told in this little booklet. A copy is yours for the asking—just fill in and mail the coupon below



SCI AKY

Sciaky Bros., Inc.
4915 W. 67th St., Chicago 38, Ill.

AA

I'd like to know more about Mr. Widget and "THREE PHASE" resistance welding. Please send me your free booklet.

Name _____ Position _____

Firm _____

Address _____

City _____ Zone _____ State _____

Kruckman

(From page 63)

the Federal Trade Commission Act and the basic Clayton Act for any group to use the basing-point system in collusion to sell at identical prices. It is very clear, however, that the ruling does not make illegal the use of the basing-point system if the shipper operates independently and uses the basing-point system purely to meet competition. For instance, suppose manufacturer A in Chicago is in competition with manufacturer B in St. Louis, and both serve a customer who is nearer Chicago than he is to St. Louis. It would be perfectly legal for B in St. Louis to use the basing point rate which is also available to A in Chicago, and which would enable B to sell to the customer at the same price as A. A would make more profit because his expense for freight would be less than is the cost for freight to B; but B would be able to keep the customer on his books. On the other hand there is this interesting situation which flows from an earlier ruling, the Corn Products and Staley cases: Suppose the manufacturer is located nearer Chicago than he is located in relation to St. Louis. He serves customers in Chicago and St. Louis. It is presumed the customers to whom he sells in the two cities are in competition with each other. Prior to the Corn Products and the Staley cases decision it was regarded as legitimate for the manufacturer located nearer to one than to the other to use the basing point system in making prices. But the Corn Products and Staley cases decision by the Supreme Court ruled that the manufacturer must abandon the basing-point practice under such circum-

stances and must make his prices f.o.b. plant. The customer either pays the freight himself, or the manufacturer bills him for exactly what the freight may cost. Obviously this makes the manufacturer's product cost the customer in St. Louis more than it costs the customer in Chicago; and that is exactly the result the Supreme Court sought to accomplish. It held that under the basing-point system in this instance the customer in St. Louis would have an unfair advantage over the customer in Chicago in getting his shipment at the same price as is paid by the customer in Chicago, and that in effect the Chicago customer would be helping to pay the freight for the St. Louis customer, since the basing-point system would involve a greater cost to the Chicago customer than he would be obliged to pay if he paid his own freight.

It is out of this medley of decisions, including a more recent one in the case of the Rigid Steel Conduit Association, that has sprung the opinion which anticipates that the effect of the Robinson-Patman Act is virtually nullified. It will be remembered the purpose of the Robinson-Patman Act is to enable manufacturers and wholesalers and others not acting in collusion, or not seeking to discriminate, to sell their wares at a fixed price anywhere in the United States. And it will be remembered before this law came into effect the uniform pricing practice had become an almost universal custom upon which a large part of the economy of the nation rests. You need only think of the cigar with the fixed price, cigarettes, chewing gum, candy, cosmetics, many kinds of wearing apparel, shoes, furniture, radios, and numerous other articles in common

Frank Furnace Says: "VOTE FOR PROFIT!"



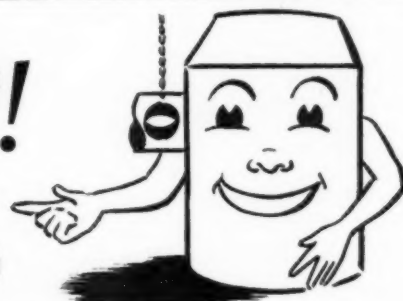
"GET ON THE



BAROCHEK BAND WAGON"

8,000,000 Hand-Fired Furnaces and Boilers
Need Barochek.

This scientific combination barometric draft control and check damper really sells! Builds profit for you and your customers too. With Barochek you're selling your customers fuel saving, convenience, steadier temperatures and safety from fire hazards.



Write or wire for literature and details of the Field plan for spring and summer heating plant cleaning service.

FIELD CONTROL DIVISION

H. D. CONKEY & COMPANY

MENDOTA, ILLINOIS

AFFILIATES:

CONCO MATERIALS HANDLING DIVISION
CRANES—HOISTS



BAROMETRIC DRAFT CONTROLS

AFFILIATES:

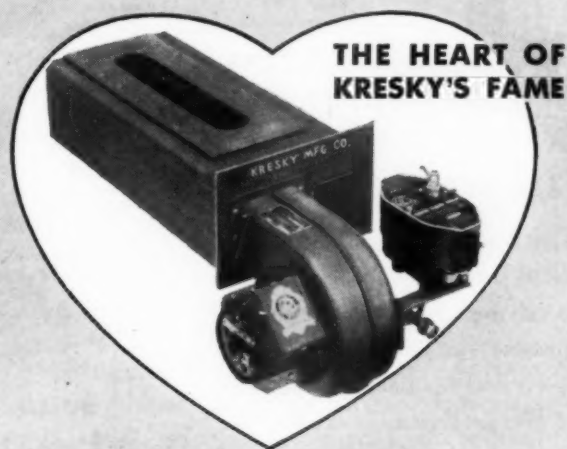
CONCO BUILDING PRODUCTS, INC.
BRICK—TILE—STONE



The Best Known Name in Oil Heating MEANS...

Leadership in Sales and PROFITS FOR YOU!

For two generations, the familiar name in oil heating equipment has been Kresky. Today, thousands and thousands of satisfied users throughout the country swear by Kresky for every heating need. That reputation means immediate customer acceptance...more sales...more quickly...for you. More net profit from every sale, too. Kresky's trouble-free operation almost eliminates expensive service calls. And customer satisfaction means repeats sales of other Kresky units.



The famous patented Kresky burner is the basic unit in all models. Simplicity itself in design, the Kresky inducts air into the oil flame in just-right amounts to give clean, quick, hot heat when you want it. Soot-free...trouble-free...that's Kresky, the all-year line for all-year profits. The Kresky line includes floor furnaces, dual wall furnaces, water heaters, basement furnaces and conversion burners for all types of ranges, home or commercial.

Valuable dealerships may be available in your territory. Write for full information...

Listed by Underwriters' Laboratories, Inc.

Write for illustrated folder

KRESKY MFG. CO., INC.
Petaluma, California



Self-Contained Inner Unit



Air Volume Adjustment

**FAST
INSTALLATION**

"Custom-made"
air pattern with
Kno-Draft Adjustable
Diffusers in
Champion Spark Plug Plant



PROBLEM: A ceramic kiln radiates heat on one side and a cold window-filled wall creates drafts on the other. The space is long and narrow with low head room. The occupants work in short sleeves. Unusually large volumes of supply air have to be brought in to combat the heat of the kiln. Space for duct work above the room is limited so that diffusers have to be spaced much closer than usual. The supply air stream has to be directed slightly above the horizontal and evenly distributed so that no drafts are felt by the personnel.

SOLUTION: Kno-Draft Adjustable Air Diffusers were chosen because of their ability to control air direction, volume and throw. A "custom-made" air pattern was created which thoroughly mixed room and supply air, maintained uniform temperature throughout and eliminated drafts, hot spots, and cold spots. Installation was fast. Kno-Draft self-contained inner units cut installation time up to 50%. Balancing was fast. CFM readings were taken directly with Velometer. A twist of the wrist changes air volume on each diffuser.

Free — New handbook on Air Diffusion

It contains the latest engineering data on air diffusion and is profusely illustrated with charts, photographs, sketches and dimension prints that simplify the selection, application, location, assembly, erection, testing and adjusting of Kno-Draft Adjustable Air Diffusers. It is designed to help you get top efficiency from an air conditioning system by creating "custom-made" air distribution patterns.

For your FREE copy, please write Dept. J-11



W. B. CONNOR ENGINEERING CORP.
Air Diffusion • Air Purification • Air Recovery

112 East 32nd Street  New York 16, N. Y.

IN CANADA: Douglas Engineering Co., Ltd., 190 Murray Street, Montreal 3, P. Q.

use. Virtually the whole system of the national distribution of newspapers, periodicals, books, and similar products, is based upon the uniform price. The possible effects of the Supreme Court rulings are extremely serious to some parts of the national economy. The difference between the average legal mind and the business mind is that in a case of this kind the legal mind regards it is a sort of cross-word puzzle which challenges his intellectual resources. To the business man it means the difference between operating profitably or going broke. For this reason the happy way in which some lawyers today are making predictions that we will have to go back to local pricing and dependence upon local resources is not exactly happy for the rest of us. They build up this supposition on the fact that if all pricing in the future must be based on the cost of an article f. o. b. plant, plus freight, there are many things which will not be able to compete successfully. They have been able to give us the things we now have by equalizing freight by such means as the basing-point system. In effect it would probably greatly stimulate the production of local plants and the expansion of local resources, but it would also deeply cut into the inflow of things from the outside, and curtail the supply of things which today we may have because we get them on a system of national distribution.

Clayton

(From page 64)

In the Norge schedule for home heaters, 20 non-com-

peting dealers participated in each of the ads published in each metropolitan section. Each dealer thus utilized approximately 10,000 exclusive circulation. The cost on the basis of 20 dealers per metropolitan section per Sunday, follows: cost of 2,170 line ad per section, \$564.20; factory-distributor share, \$282.10; cost per ad per dealer, \$14.10.

Appliance firms have used the Selective Area technique most extensively to date. Bendix Home Appliances, Zenith Radio Corp., and other appliance firms are basing extensive nation-wide co-operative advertising schedules on the Selective Area formula in order to give local dealers throughout the country the benefit of big, vigorous copy. Through the Selective Area technique, General Electric has been able to help dealers obtain the exclusive use of 20,000 full-page, four color advertising impressions in their own trade zones at an investment of \$39.74 each.

Since the formula appears to be applicable to any selective dealer organization, it has aroused widespread interest in other fields; as pointed out above, several heating equipment manufacturers already are using the technique and others are investigating it.

Among the impressive aspects suggested by disciples of the Selective Area technique is the opportunity for a manufacturer with a selective dealer organization to buy some 500,000,000 advertising impressions in 15 markets representing 49.55 per cent of the nation's sales volume with an investment of \$350,000.

Under this program the \$350,000 would be matched by distributors, and the combined investments of the



Here's Our New WARMOLATOR '20'

IT'S A 20,000 BTU WALL CIRCULATOR!

The newest addition to the Williams line, the sensational Model "20" is small in size but BIG in performance. About four feet tall, it packs 20,000 Btu's of vented wall heater into the space between 2x4 studs on standard 16-inch centers. No furring or special framing is required to install this compact unit. Entirely new from its air-cooled, drilled port burner and finned heating element to its clean exterior styling, the Williams "20" is designed to circulate plenty of warm air to every corner of the room.

CONVENIENT HI-LO-MEDIUM CONTROL



Just set the knob located at the top of the heater panel and you get the heat you want, high, low, or medium. The knob is at the most convenient level for adults but safely out of children's sight or reach.

Write Department T-1 for Complete Information.

WILLIAMS RADIATOR CO.

Sponsors of Better Heating Since 1916
1821 FLOWER STREET • GLENDALE, CALIFORNIA



EASY TO INSTALL
Fits between the studs
...no framing required.



FITS ANY PLAN

Model "20" is ideal for apartments, homes, offices, guest houses, bathrooms, etc. . . and it's adapted to natural, manufactured or LP gas.



SAFE FOR CHILDREN

Completely enclosed
...no exposed elements
to burn tiny fingers.

GREAT NATIONAL

"Weathercrafters for the Nation"

will Manufacture and Sell
the NEW, REVOLUTIONARY

DE-HU-MATIC (TRADE MARK)

Evaporative Cooler

Under License Arrangement with
**UNITED STATES AIR
CONDITIONING CORPORATION**

• • •

The Sensational . . .

DE-HU-MATIC Evaporative Cooler

. . . delivers

Drier - Cooler - More Comfortable Air.
Completely Automatically Controlled

• • •

Prevents dampness or "Mugginess". Achieves
an atmospheric condition of cool, refreshing
comfort heretofore unknown with ordinary
Evaporative Coolers.

• • •

WRITE FOR DETAILS

GREAT NATIONAL

AIR CONDITIONING CORPORATION

2146 N. Harwood St.

Dallas, Texas



Clean furnaces quickly— easily — thoroughly!

Check the advantages of the General Electric Furnace
and Boiler Cleaner

• The new General Electric Furnace Cleaner can do a
thoroughly efficient job on any furnace.

This timesaving furnace cleaner has a powerful suction
action that quickly removes soot and scale from furnace
interiors. It's so fast, so efficient that you can clean many
furnaces a day. That means more profits for you!

It's simply constructed, light in weight. One man can
operate it with *no previous training*.

General Electric backs this machine with the company
warranty, and provides all special tools and accessories.
For further details, mail coupon below. General Electric
Company, Bridgeport 2, Connecticut.

FAST • EFFICIENT • QUIET • ECONOMICAL

The New General Electric

Commercial Vacuum Cleaner

GENERAL  ELECTRIC

A & M Department, Section 135 General Electric Company,
Bridgeport 2, Conn.

Send descriptive literature concerning

- () Wet and Dry Pickup Vacuum Cleaner
() Furnace and Boiler Cleaner

Name.....

Firm.....

Address.....

City.....State.....

manufacturer and distributors would be matched by dealers to provide a \$1,400,000 advertising fund. For approximately this sum, advocates of Selective Area advertising point out, a manufacturer and his dealer organization could develop 50-page campaigns in the Chicago Tribune, New York News, Los Angeles Times, Philadelphia Inquirer, Detroit News, Cleveland Plain Dealer, Boston Globe, Washington Times-Herald, San Francisco Chronicle, Baltimore Sun, St. Louis Post-Dispatch, Pittsburgh Press, Minneapolis Star Tribune, Milwaukee Journal, and Buffalo Courier Express.

Since the combined circulation utilized in such an advertising schedule would total approximately 10 million, the manufacturer can achieve a nation-wide advertising impact in key metropolitan markets, and at the same time can associate his product with a nearby point of sale some 500,000,000 times.

Murphy

(From page 68)

lated on the result, then the tax is multiplied by two. Here is an example:

(Man and wife with two children)	
Total income.....	\$5100
Less deductions	510
Net income	\$4590
One-half of income.....	2295

4 exemptions \$2400

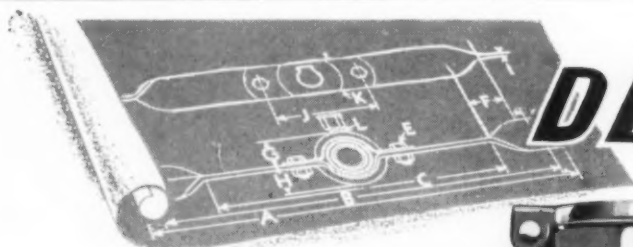
One-half	1200
Surtax net income.....	1095
Tax (tentative).....	219
Less 17%	37.23

Tax for one person..... 181.77

Multiplied by 2 = \$363.54. The tax for husband and wife under the community property privilege. The tax under the old law would have been \$505.40, therefore the new provision saves the taxpayers \$141.86.

You will note that instead of deducting 5 per cent from the tentative tax as last year, we deducted 17 per cent. The new provision calls for a deduction of 17 per cent on the first \$400 of the tax, and 12 per cent on the excess over \$400 up to \$100,000.

This provision saves the taxpayer again, as witness: Assume that your tentative tax last year (1947) was \$520. Under the provisions prevailing for that year, you would deduct 5 per cent as an overall deduction. This 5 per cent was a little present Congress gave you several years ago to keep you quiet until things settled down, or until presidential election year rolled around. So 5 per cent from \$520 leaves \$494 which would be your final tax. Now apply this year's provisions: instead of deducting 5 per cent we deduct 17 per cent of the first \$400 of the tax, or \$68. But we have another \$120 of tax, from which we deduct 12 per cent or \$14.40, we get \$82.40 the total deduction, which, sub-



This shock-absorbing pillow block was designed by air conditioning engineers for fans, blowers and other devices requiring **silent operation, perfect alignment, self-lubrication, and minimum obstruction to air flow.** No other bearing provides all of these advantages.

DESIGNED for Air Conditioning

Shown here is one of several types of mountings. We are glad to cooperate with engineers in designing mountings to meet their specific needs. Tell us your problems and we will send other types of mountings, specifications and complete information.



TRIANGLE MANUFACTURING CO.
392 Division St. Oshkosh, Wis.



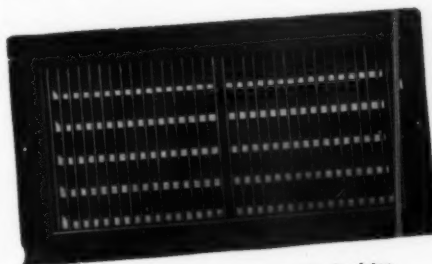
•
**ANGLE
RINGS
to Your
Required
SIZE**
•

We Roll Angle Rings to your specifications accurately with uniform curvature—that join up naturally—also Tees, Channels, Bars and special shapes—with or without rivet or bolt holes. Saves time and effort when you back them up or fit them in on the job. Made to fit your needs—complete circles or any part thereof.

Used for reinforcing tanks, joining pipe or smoke stacks, installing air conditioning fans, and thousands of other uses. Write for standard sizes and discounts.

National Metal Fabricators
2136 S. Sawyer Ave. Chicago 23, Ill.

AIR-VANE FORCED AIR REGISTERS



Made By
ROCK ISLAND
... You Know
They're Good!

No. 802 AIR-VANE Forced Air Register

Quality of equipment is essential to the performance and life of any modern forced warm air heating installation. You'll find that Rock Island's AIR-VANE Line will fill the bill for you on the most exacting jobs. They're constructed with vertical or horizontal vanes for right or left or downward deflection of air flow. Multi louvre dampers for closing and 15 degrees downward directional air flow are standard. This versatile model is also available with single louvre in wall or baseboard registers.

Check the complete Rock Island line ... if it's a Rock Island Register you KNOW it's good.

ROCK ISLAND REGISTER CO.

ROCK ISLAND, ILL.

2435 FIFTH AVENUE



MAGIC-AIRE

*Tops in
Panel Heater
Performance!*

WHEN you install Magic-Aire Panel Heaters, you give your customers "the aristocrat of heaters." Magic-Aire circulates warm clean air evenly to all cold, damp surfaces and far corners. Equipped with 100% safety pilot. Blue-flame efficiency. Durable and attractive. Easy to install.

A.G.A. Approval
FOR HOMES • MOTELS • COURTS

Manufactured by
WIRE & METAL MFG. CO.
5965 Alcoa Ave., Los Angeles 11

Sales Representatives

THE A C COMPANY
1315 East 7th Street, Los Angeles 21, Calif.



**THE ONE HOLER
IS OUT OF DATE..**

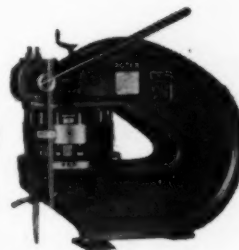
**IN PUNCHES TOO,
THE ONE HOLER IS
A THING OF THE PAST.**

**ROTEX
PUNCHES**

REVOLVING TURRET HEAD -- UP TO 18 SIZES.

✓ CHECK THESE FACTS!

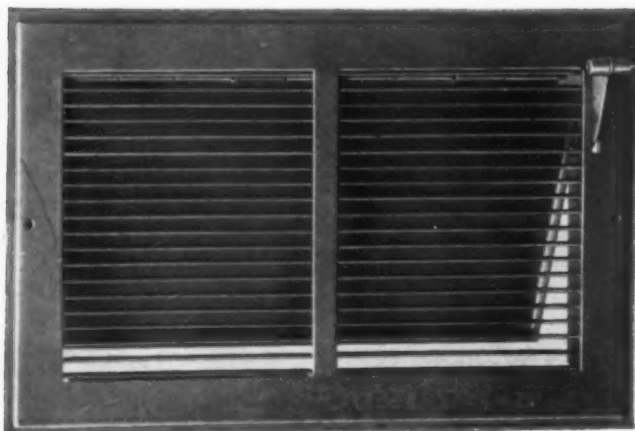
- ✓ Simplicity of Operation
- ✓ Throat Depth Up to 24 Inches
- ✓ Will Handle Wide Range of Materials
- ✓ Capacity Up to 10 Gauge Mild Steel
- ✓ Punches and Dies of Highest Quality Tool Steels
- ✓ Special Shapes & Sizes of Punches and Dies Available



WRITE FOR FOLDER

ROTEX PUNCH COMPANY

4726 EAST 12 STREET • OAKLAND 1, CALIFORNIA



Sidewall Register	- -	#20
Sidewall C. A. Grille	-	#28
Baseboard Register	-	#24
Baseboard C. A. Grille	-	#27
Floor Faces	Prompt Delivery - - - -	#50

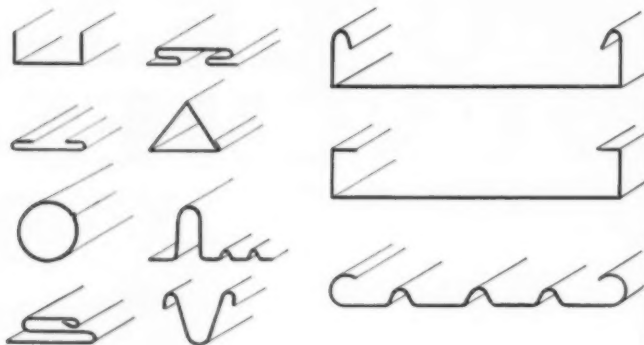
Immediate
Delivery
on
5" & 6"
Heights

MIDCO REGISTER CORP.

1059 Grand Ave.

St. Paul, Minn.

ROLL FORMING MACHINES AND ROLLER DIES



Also Pittsburgh Lock Machines, Pipe and Elbow, Beading, Turning Machines and all other Sheet Metal Working Machinery. Your inquiries invited.

MAPLEWOOD MACHINERY CO.

2634 FULLERTON AVE.

CHICAGO 47, ILLINOIS

tracted from \$520, leaves \$437.60, as compared with \$494, or a saving there of \$56.40 on that one feature alone.

Other Pertinent Facts

Your employees should be much happier. They will have more money to spend. A man earning \$52 per week, paid weekly, (wife and two children) will have 20 cents withheld from his pay instead of \$1.70. The new withholding tables show substantial reductions in withholdings in all brackets. A man can earn \$38 per week, if he has a wife and one child, and pay no tax.

Over 7,000,000 wage earners will pay no more income tax. Next year 30 million taxpayers will collect refunds, because the withholdings from January 1 to March 31, 1948, were at the higher rates, which went out of existence December 31, 1947.

If you filed a Declaration of Estimated Tax for the year 1948, based on the 1947 rates, you can adjust that by filing an amended estimate June 15th.

Community property provisions were also made regarding estate and gift taxes, and attorneys all over the country are surveying wills and trust deeds to revise them to take advantage of savings provided in the new bill. This is a highly technical set up (so much so that the Senate Committee issued a 35-page pamphlet about it) and anyone who has made a will or who has deeded money or property over to a trust fund should have his attorney check on the status of his property under the new law.

Unless the income of a married couple is more than \$3000, they will get no material benefit by splitting the

Speed Up Orders With a

BEVERLY SHEAR

Throatless shears
that cut any shape
... straight, cir-
cular or irregular.
FASTER — accu-
racy! Order No. 1

for 14 gauge. No. 2 for 10 gauge.
No. 3 for 3/16 inch mild steel and
10 gauge stainless. Available with or
without stand.



BEVERLY SHEAR MFG. CO.
3001 W. 110th Place Chicago 43, Ill.

UNIVERSAL VENTILATING SYSTEM

Cooling Assures COOL
REFRESHING COMFORT

GREATER DEALER PROFITS



MODEL 18-F

Universal Coolers are built for easy installation — years of trouble-free operation.

Maximum cooling efficiency assured. By turning off the water to the cooler on humid days, cooler becomes a very efficient ventilating system.

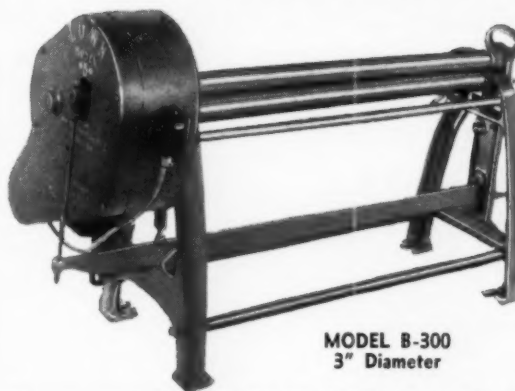
DEALERS—
ORDER ONE TODAY
PROFITS WILL START
IMMEDIATELY

DISTRIBUTORS—
CHOICE TERRITORIES
OPEN NOW
WRITE FOR DETAILS



1719 SO. CENTRAL AVE., PHOENIX, ARIZONA

LOWN Slip Roll Forming Machines FIT YOUR JOB!



MODEL B-300
3" Diameter

If you want MORE PRODUCTION and ECONOMICAL OPERATION, use LOWN Slip Roll Forming Machines.

Our machines are designed for sturdiness and ease of operation to provide peak productivity.

Rugged — Rigid — Attractive — Prompt Deliveries.

The LOWN Slip Roll Forming Machines are built in a range of sizes from which you can choose the exact unit for your requirements, with roll diameters 2" through 6".

San Angelo Foundry & Machine Co.

San Angelo, Texas E. Upton & SFE Tracks
Distributors in Most Principal Cities — Write for Bulletins.



**ARE YOU
MISSING
A GOOD
DEAL?**

General Filters thinks you are if you don't install a General Filter for every one of your fuel oil burner customers. It's a "good deal" for the customer since it greatly aids in eliminating troubles due to clogged nozzles and it's a profitable service item for you. If you haven't already done so, investigate by writing to your jobber or directly to us.

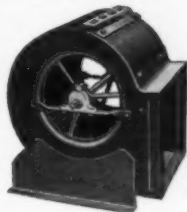
GENERAL FUEL OIL FILTER

12890 WESTWOOD AVE.
DETROIT 23, MICHIGAN

• BLOWERS •

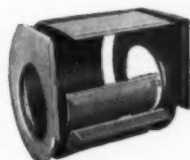
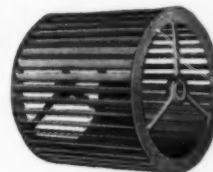
for

Air Conditioning Furnace Manufacturers



The New Bishop & Babcock
Air Conditioning
Blower Assembly
Type "AC"—Design 2

The New Bishop & Babcock
Blower Wheel
For Air Conditioning
Furnace Blowers



The New Bishop & Babcock
All Stamped
Housing Assembly
and Component Parts

Write for Bulletin No. 115

MASSACHUSETTS BLOWER DIVISION

The BISHOP & BABCOCK Mfg. Co.

4901 HAMILTON AVENUE

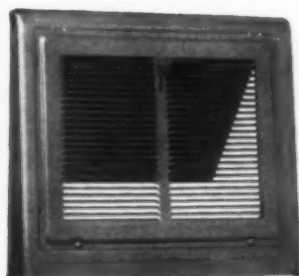
CLEVELAND 14, OHIO

NEW **STANDFORATED** GRAVITY BASEBOARD REGISTERS

NOW IN PRODUCTION

QUICK DELIVERY!

2-Piece Construction with Removable Face of "BEND-EZY" Design. Metallic Finish.



FORCED AIR REGISTERS

Immediate Delivery on All Standard Sizes

SPECIFICATIONS:

Duct Size	Base Ext.
10" x 8"	2 1/4"
12" x 8"	2 1/4"
12" x 9"	3 1/4"

PERFORATED METALS FOR EVERY INDUSTRIAL USE

[We also manufacture the MIRRO-GLO LINE of Bathroom Medicine Cabinets.]

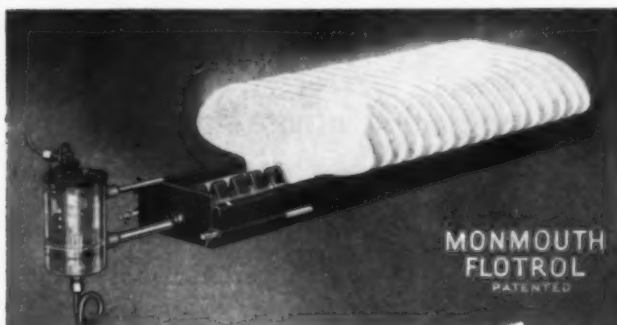
WRITE FOR COMPLETE INFORMATION. PRICE LIST.

STANDARD

STAMPING & PERFORATING CO.

3137 W 49th PLACE

CHICAGO, ILLINOIS



MONMOUTH HUMIDIFIERS

Humidifiers are a popular item with home owners right now—more and more people recognize that proper humidification is essential to healthful heating. For top performance and long dependable service, use Monmouth Flotrol or Micro-Feed models.

All Monmouth Humidifiers are now equipped with brand new design plates, improved in efficiency and durability. We also make gas-operated Humidity Conditioners for all radiator jobs. Details on request.

THE CLEVELAND HUMIDIFIER CO.

7802 Wade Park Avenue Cleveland 3, Ohio

income. The surtax rate is 20 per cent on the first \$2000 of surtax net income (after deductions and exemptions. An income of \$3000 would be subject to at least 10 per cent of deductions, which would bring it down to \$2700. Then, the two personal exemptions amount to \$1200 which would bring the figure under the \$2000 mark, which all tax accountants try to keep their clients' taxable income below, if at all possible. Above \$2000 the rate becomes progressively higher.

Just a few examples of the savings under the new bill:

A married man with two children, earning \$3000, saves \$90, single man \$76; a married man with two children earning \$5000, saves \$157, single man \$111; married man with four exemptions, earning \$7000, saves \$265, single man \$153.

Of course, in states where the community property privileges have been established for some time, these savings will not apply in full, as part of the savings computed come from the splitting up of income to reduce the surtax.

Markstein

(From page 70)

Being wise, this heating contractor didn't try to flood his local newspaper with the stories. He called them to the editor's attention one at a time, a month apart. Several very interesting—and very profitable—feature stories were the result. Don't expect the editor to give a glowing account of the company in return for such help. Consider a casual mention of the shop—so

EASY EXTRA PROFITS
on every Automatic-Heat installation

Lowest Cost
HOME INCINERATION
available!

Majestic
No. 30 FUELLESS
HOME
INCINERATOR

Low cost and "self-burning" action bring quick sales for this easy-to-install incinerator—especially where automatic heating prevents rubbish-burning in the furnace! Burns wet or dry garbage and rubbish; advanced down-draft action dries the waste constantly. Contents need be ignited only once or twice a week; ashes removed only once or twice per month. Unit is only 2 feet in diameter, less than 3 feet high! Uses any 8-inch flue; will not affect heating-plant efficiency if tapped to furnace flue. Handsome silver-and-blue duotone finish! Write for details!

The Majestic Co.
842 Erie Street
HUNTINGTON, INDIANA



Nationally Advertised Home Necessities for Over 40 Years.

**BUY THE BEST . . . BUY A
REED ALL STEEL BENDING ROLL**



Here, for both production and job shops
is the answer to light gauge rolling jobs.
Made in five sizes, from 36" x 10 ga.
to 72" x 16 ga.

- ★ ALL STEEL
- ★ COMPACT
- ★ BRONZE BEARINGS
- ★ ENCLOSED BEARINGS
- ★ LOW IN COST

Available for prompt delivery, and we do mean **PROMPT**

REED ENGINEERING COMPANY

ENGINEERS AND MANUFACTURERS
CARTHAGE, MISSOURI U S A.

BETTER
DELIVERY

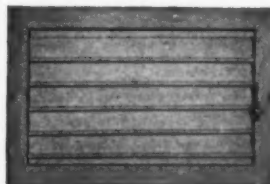
**VICTORY
REGISTER**
(STYLE V)

MODERATELY
PRICED

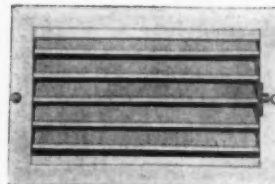
A ONE-PIECE REGISTER OF STURDY CONSTRUCTION

PERFORMANCE

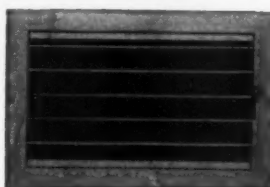
Up-Down deflection as required for "Good Practice" rating
by "YARDSTICK", published by National Warm Air Heating
and Air Conditioning Association.



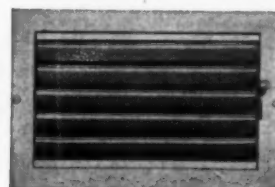
CLOSED



DOWN DEFLECTION



STRAIGHT



UP DEFLECTION

Write for Catalog #12 showing all types
of Air Conditioning Registers and Grilles.

REGISTER & GRILLE MANUFACTURING CO., Inc.
66 BERRY STREET BROOKLYN 11, N. Y.

AIR-FLO
AUTOMATIC
CEILING SHUTTER
FOR ATTIC FAN

Built so they can be installed practically flush
with the ceiling, AIR-FLO Ceiling Shutters pre-
sent a refined, finished appearance. Their natural
aluminum color blends with any decoration, elim-
inating need for painting, and no grille or winter
cover is required. Furnished in 5 different widths,
single panel up to 73" long. No operating mech-
anism shows. Built-in fusible link. Meets fire
underwriters requirements.

WRITE FOR NEW CATALOG 43-C

Illustrations and details of the complete
AIR-FLO line.

AIR CONDITIONING PRODUCTS CO.
2340 W. LAFAYETTE BLVD. • DETROIT 16, MICH.

PERFORMANCE PLUS!
ATH-A-NOR
Furnaces and Parts



Performance is the yardstick for measuring
the efficiency of any heating plant, and those
that will operate year after year with little or
no attention are the ones which will return you
the most profit.

You're sure of top drawer performance when
you install ATH-A-NOR Furnaces and parts
exclusively. Over fifty years of furnace man-
ufacturing experience guarantee you home
heating plants with performance ratings and
lasting qualities to satisfy the most critical
clients. Investigate now . . . write for lit-
erature.

MAY-FIEBEGER COMPANY

Manufacturers of Quality Heating Equipment
for Over Fifty Years.

Newark

Ohio

FOR VITALIZED HEAT USE *Convector* HUMIDIFIERS

For straight-side
mounting only.



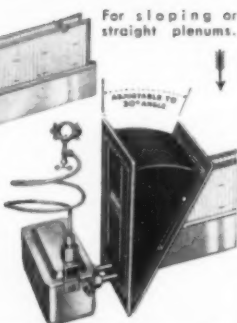
**Make
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Entirely new and patented principle — tremendously more efficient, much faster acting. Easier to sell, easier to install, easier to service... sizes for all types of furnaces. Interested in making **MORE** money?... then investigate Maid-O-Mist Convector Humidifiers **NOW**.

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For sloping or
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long as it presents the company favorably, in a favorable-angle story—ample compensation. Stunts often help to focus news interest on a special promotion. But stunts can be overdone. To be effective, they must tie indirectly to the genuine news value of the story as it will be developed by the publication.

Many editors believe that a picture is worth a thousand words and, in any case, a story that is well illustrated stands a better chance of being used than an unillustrated article. In furnishing pictures for publication, it is wise to be sure they have action and human interest. People like to look at people, and action attracts a reader's (and an editor's) eye.

If the story is furnished, ready-written, in release form to the publication, it is vitally necessary that slanting be eliminated. It must be written as the reporter himself would write it, without selling plugs or superlatives.

Blasingham

(From page 75)

before the outside temperature begins to rise. Automatic control will turn it on and off at the times he pre-selects.

A satisfactory application of the equipment is important to the customer and is of equal importance to the dealer as it will affect his future welfare.

It is just as easy to lay out a good home ventilating system as a bad one. Selection of the proper sized fan is, of course, based on the volume of the space in the

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MORE AND MORE STOKER CUSTOMERS
FOR ME. I HAVE FOUND ECON-O-COL
STOKERS MEAN FASTER SALES
... FEWER SERVICE CALLS!**



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The "Stronghearted" Stoker

BUILT BY COTTA TRANSMISSION
COMPANY • ROCKFORD, ILLINOIS



WRITE FOR DETAILS OF
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SLIP ROLL FORMING MACHINE

Rolls Manufactured 1" to 6" in diameter...
to 10' length. Handles up to 1/4" capacity.
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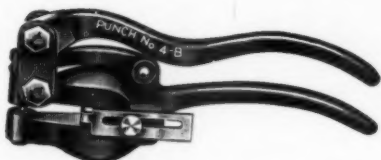
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The No. 4B PUNCH
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This punch is accepted by leading contractors and dealers as a real time-saver in the shop and on the job. Men who use it every day know it can't be beat for clean, fast punching. Has a capacity of 1/4" through 16 ga., weight 3 pounds, 8 1/2" in length, depth of throat, 2". Complete tool includes three punches and three dies of specified sizes with die adjusting key.

W.A. WHITNEY MFG. CO.
636 RACE ST. ROCKFORD, ILL.

AMERICAN ARTISAN, June, 1948

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There is a member for your staff that will never need a vacation, one that will work efficiently through the hottest days. The Super Red Streak Furnace Cleaner operates for you at a profit cleaning furnaces and revealing the need of repairs and replacements. Summer is the time when coal users want their heating units put in shape for next winter. The best way to handle this profitable business is to clean the unit first.



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National Super Service Company of Canada
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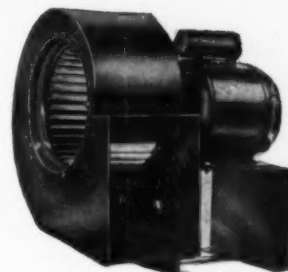
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Protect your machinery the safe way with H & K "Make Your Own" Safety Guards... strong, safe, inexpensive. Ask about them!



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residence to be ventilated. The fan should be selected to give one complete change of air in that volume once every minute to minute and a half; the former rate of change for hot humid climates and small homes anywhere, and the latter rate of change for northern climates and large homes. Commercial ventilation is based generally on rate of air movement in feet per minute through a given room—35 fpm to 70 fpm being the usual range of air velocity selected to move through the cross sectional area of the ventilated room.

Details of installation have been so systematized that any dealer's installation crew should have no difficulty in making a first-class installation in any residence.

Characteristic of this simplification is the electric wiring required for the job, since most controls are mounted on the wall like a thermostat, use line voltage requiring only a line dropped down in the partition from the attic wiring. Whenever the fan motor is 1/3 HP or larger, it is desirable (even when not required by local code) to run a separate line to the fan motor from the service box.

Openings in the attic wall must be provided to allow escape of the air from the attic. Frequently a window, when louvered with wooden or sheet metal louvers will suffice in area. A rule of thumb is to provide between 1 and 1½ sq ft of free area for each 1,000 cu ft of air moved by the fan. Since sheet metal louvers obstruct the opening approximately 35 per cent and wooden louvers approximately 50 per cent it is necessary to allow one half again as much total area as is required for free air in the first case and twice as much total area as is required for free air in the second. Whenever

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WITH

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It's easy to get a lion's share of furnace cleaning profits when you use a Grand Rapids Furnace Cleaner. Greater cleaning capacity, handling ease and practically designed groups of furnace cleaning attachments help you give better service and clean more furnaces per day at a higher profit.



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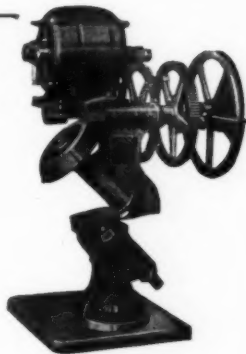
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BETTER . . .
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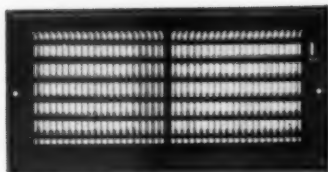
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AMERICAN ARTISAN, June, 1948

REINHARD

Gas
Conversion Burner
with the Exclusive
"AIR-LOCK" Principle



Model 8-CD
Listed by American
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The Reinhard "Air-Lock" principle causes the flame to spread and reach the sides of the fire-box quickly without the use of baffles, thus ensuring maximum fire travel and heating efficiency. All valves and controls are under cover—nothing shows in the basement but the neat, attractive casing.

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YACKITY, YAK-YAK!

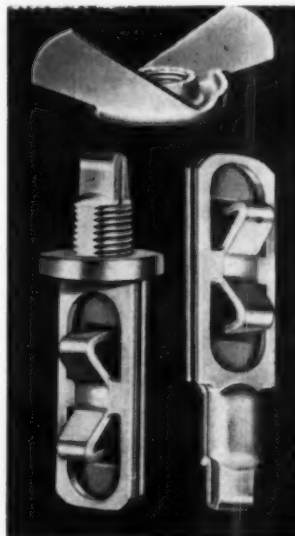


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DE-STA-CO Quality TOGGLE CLAMPS

Your work-holding tools give fast, uniform clamping action—longer life—greater power—because De-Sta-Co's more than forty models give you *quality* features:

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New portable and plunger clamps are coming—to meet your various work-holding needs. Write for illustrated clamp catalog and name of stocking representative in your area.

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AA-1

possible louvers should not face the prevailing wind. This is to prevent entry of rain and reduction of air flow through wind pressure against the louvers.

With due attention to the engineering problems involved, a trained installation crew and a modern sales approach dealers are setting new records in home ventilating sales.

Mirabile

(From page 79)

The electrodes must not project into the oil spray. The spray is ignited by the fan blowing the spark into the spray. If the spark only projects into the spray about 1/4 in. to 1/2 in. the electrodes will remain dry. Carbon will not form on the points and cause ignition failures.

Check the position of the air tube where it comes through the front wall of the combustion chamber. It should not project inside the chamber more than 1/4 in.

Most burners have a small hole in either the bottom of the air tube or at the end of the air cone to permit any possible oil drip to drain into the combustion chamber. Is this hole free from refractory cements?

Do not hold the flame mirror inside the furnace too long. If it gets too hot it will lose its mirror finish.

23. Open the line switch and remove the pressure gauge assembly. Screw in port plug tightly.

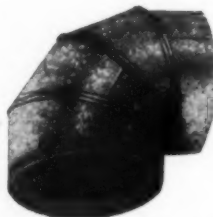
24. Restart burner by again closing the line switch.

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FURNACE PIPE & FITTINGS

**FOR FORCED AIR AND AIR
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- The quality of "AJAX" Fittings is fully guaranteed.
- Made of high-grade full gauge sheets. No seconds used.



Every order, large or small, receives personal attention.

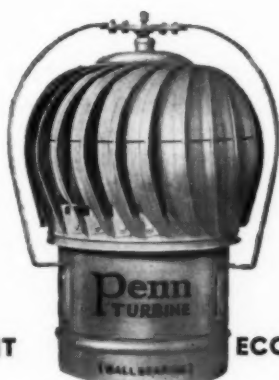


AJAX FURNACE FITTING CO.

Division of
THE CINCINNATI SHEET METAL & ROOFING CO.
 216-20 E. Front St., Cincinnati, Ohio

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EFFICIENT

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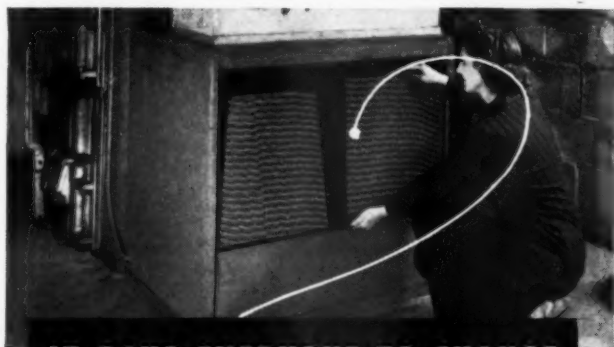
HEATING EQUIPMENT JOBBERS: Here's a real profit booster. Sell them for all General ventilating work. You can get immediate delivery on these quality ventilators in sizes from 4" to 42". Write today for information.

PENN VENTILATING CO.

Goodman above Allegheny Avenue
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Manufacturers of

Penn Power-Pul-Air-Liberty-Penn Turbines
For Over 25 Years THE BUILDER'S ROOF TOP LINE



IT PAYS EVERYONE TO CHANGE
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For your customers, Detroit Air Filters mean . . .

- Low maintenance cost
- Maximum dust-collecting efficiency
- Minimum air resistance
- Greater dust-carrying capacity
- More uniform performance
- Greater economy and long life

Sold only through the warm air heating, ventilating and refrigeration trades, Detroit Air Filters are recognized as dependable products that mean more profits for you. Write for illustrated booklet.

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FURNACE and BOILER REPAIRS

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has repair parts for all
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Good stoker coal and an ANCHOR STOKER make an unbeatable team. Now, with gas and fuel oil harder than ever to get, you have everything to gain in selling ANCHOR STOKERS.

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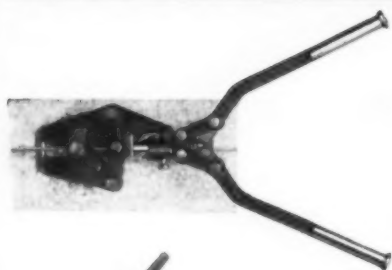
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4 thicknesses of 24 ga.
DEPTH OF THROAT— $1\frac{3}{4}$ "
WEIGHT—10 lbs.



NOS. 1828, 1829, 1858, 1868
DEEP THROAT LEVER PUNCHES

THROAT HEIGHT, ALL SIZES—6"
CAPACITY, ALL SIZES— $1\frac{1}{2}$ " THRU $\frac{1}{8}$ "

ALL TYPES OF PUNCHES and DIES
AVAILABLE—Round, Square, Etc.—
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Heating
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Air Conditioning
Supplies

Furnace pipe, adjustable
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ALSO: Complete line sheet metal hand tools

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**TINIT makes
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Eliminate "headaches" with TINIT! It flows into crevices—and you're sure it's tinned because you can see it! Cleans, tins and fluxes stainless steel, black iron, hard-drawn copper and all metals in one quick operation. Sold by refrigeration service, tinning supply, automotive and other jobbers for 19 years.

TINIT MFG. CO., INC.

P. O. Box 794, Denver, Colo.

Observe the start. Was it instantaneous? If not consult instructions.

25. Close the inspection door.

26. Check the operation of the limit control.

The burner should stop when the indicator is lowered below the approximate furnace temperature. Now move it back to its recommended setting. After the scavenger period of the stack relay (approximately one minute minimum or more) the burner will start.

27. Check the operation of the stack relay.

With the burner running, gently remove the relay from the smokepipe. The burner will stop in a few seconds—when the hot contacts open. This is comparable to a flame failure while the burner is operating. With the helix out of the smokepipe, the burner will start after a short interval. But the hot flue gases are not affecting the relay. This is comparable to a flame failure at start, so the burner will stop after approximately 90 seconds.

Reinsert the relay in the smokepipe and press the reset button. When burner starts, observe the time the ignition relay remains in. Consult instructions.

After several minutes of continuous operation, open and immediately close the line switch. The burner will stop, but not start until the cold contacts in the relay close. This is the scavenger period. Time it. Consult instructions.

28. Check the room thermostat.

Lower the temperature setting several degrees below room temperature. The burner will stop. Wait until the relay recycles. Then raise the setting until the burner starts. Consult instructions which will give complete directions for testing and adjusting calib-

Only \$2.00 for This Outstanding Book on Air Conditioning

THIRD EDITION

Air Conditioning for Comfort

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Easy to understand . . . accurate . . . comprehensive . . . these are the features of this third edition of Samuel R. Lewis' well-known AIR CONDITIONING FOR COMFORT. Fundamentals are fully and clearly covered. Correct procedure in designing complete systems for both residences and large buildings is explained step by step. In addition, considerable original data on such subjects as standards, noise control, measurements, and fire protection codes has been included.

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THE FORCED AIR UNIT
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SAVES FUEL • AVAILABLE NOW • QUIET
ECONOMICAL • AUTOMATIC • EASILY
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Improve the efficiency of thousands of Gravity type furnaces and add to your profits by installing CIRCULATAIRE. No duct work required - no baffles - no wiring! (*Average Installation Time Less Than Two Hours.*) Write for complete information.

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—for AIR CONDITIONING, HEATING
and SHEET METAL JOBS

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is in a Self-Created Class

SPECIAL NOTICE TO BUYERS:

If you haven't received the TRI-SAW you ordered, it's because shipments have been delayed due to changing over to an improved design. All orders will be filled promptly from now on.

TRI-SAW DOES THESE THINGS EFFICIENTLY AND ECONOMICALLY

- Cuts openings for louvers in gables and roofs in jig time!
- easily scrolls in all types of material, permitting circular or parabolic cuts.
- has special blades for "roughing in" electrical, plumbing, heating, carpenter work, and for maintenance work.

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CORPORATION

P. O. BOX 1434

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Looks Modern



Compact cabinet is designed and finished for the modern home. Rounded corners. Less floor space. Install in basement, kitchen, or other rooms.

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A.G.A.-approved for natural gas, manufactured gas, and liquid-petroleum gas. Approved for low and high altitudes. No traps or baffles. Quiet, automatic, winter air conditioning.

Series "UM"
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1000 Brittan Ave. San Carlos, Calif.

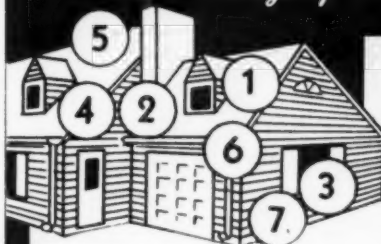


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PERMANENT LOW-COST PROTECTION WITH

CHINC

That Amazing New Metal



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- 3-WINDOW FRAMES
- 4-EAVES
- 5-RIDGES
- 6-GUTTERS-DOWNSPOUTS
- 7-TERMITE SHIELDS

HIGH grade zinc, copper and magnesium are combined to produce a tough, strong, workable sheet metal at less than half the cost of 16 oz. copper.

Can't rust, solders easily, forms readily, doesn't stain white trim, doesn't corrode in mortar joints, and stands up at the seashore where so many metals meet their doom.

Made in rolls, strips, sheets and a full line of rain carrying equipment, including gutters and downspouts, all 26 U.S. gauge.

Meets government requirements for housing.

Sold by distributors everywhere. Send for literature and sample.

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Sundstrand OIL BURNERS



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- QUIET
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ration and differential. Set indicator at desired temperature.

29. Close or replace covers on controls and switches.

The system has been tested for safe and satisfactory operation. Tests and adjustments to insure combustion efficiency are the next step in a routined starting procedure.

Insulation

(From page 84)

negligible. Easily cut, indented, etc. Will not adhere to masonry.

Suggestions: Surface may gradually spall away if subjected to moisture and freezing. Dip in roofing pitch or asphalt for protection. Use tie wires for attaching to masonry.

2. *Material* Glass fibres with plastic binder, such as "Fibreglas", coated or uncoated.

Thickness: $\frac{3}{4}$ ", 1", $1\frac{1}{2}$ ", 2"

R Factor: (per 1" thick) 3.33 to 3.85

Characteristics: Will support about 12 lbs. per sq. in. Water penetration into uncoated board is slow and disintegrates the binder. Water penetration into coated board is inconsequential unless exposed to a constant head of water.

Suggestions: Use coated board or apply coat to uncoated board, using coal tar pitch or asphalt. Where moisture is ex-



Std. Arr. No. 1
for Belt Drive

New and improved "EX" Fans are now available in standard sizes from No. 15 to No. 80 and from 200 to 30,000 CFM Capacity with pressures up to 15" W.G. These fans are commonly used for exhaust problems to handle dust, fumes, shavings, etc., but can be adapted for forced draft service.

"EX" Fans are furnished in all standard arrangements of the N.A.F.M. The design is such that it can be easily modified to suit special assemblies, thus "EX" Fans are ideal for resale purposes, as part of factory assembled units.

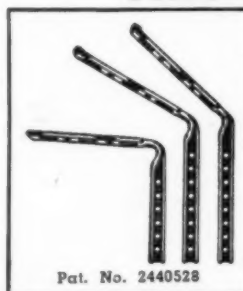
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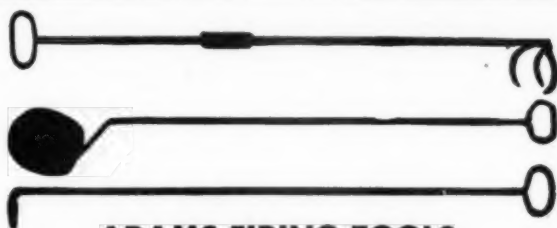
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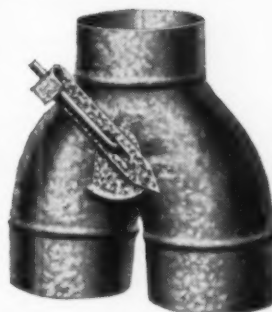
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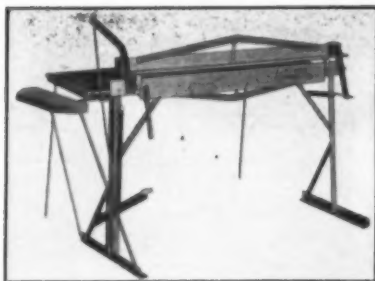
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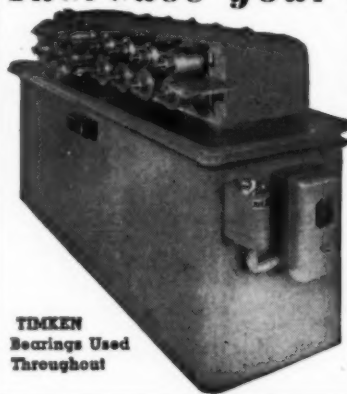
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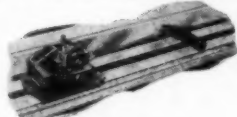
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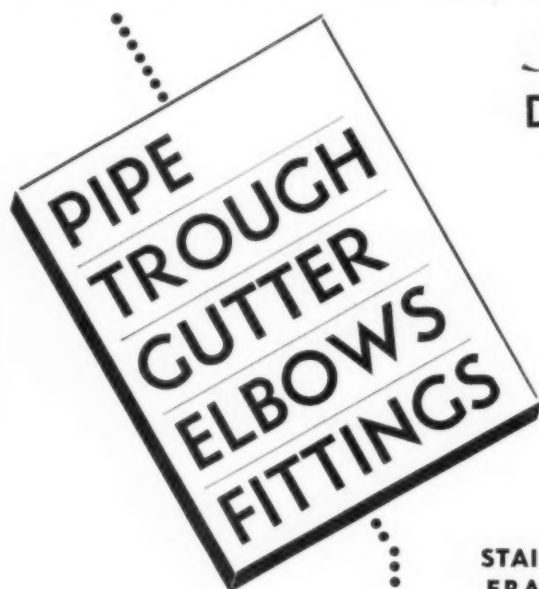
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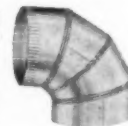
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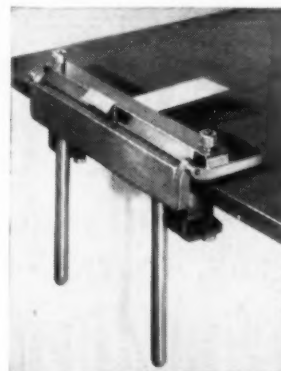
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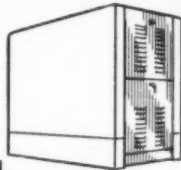
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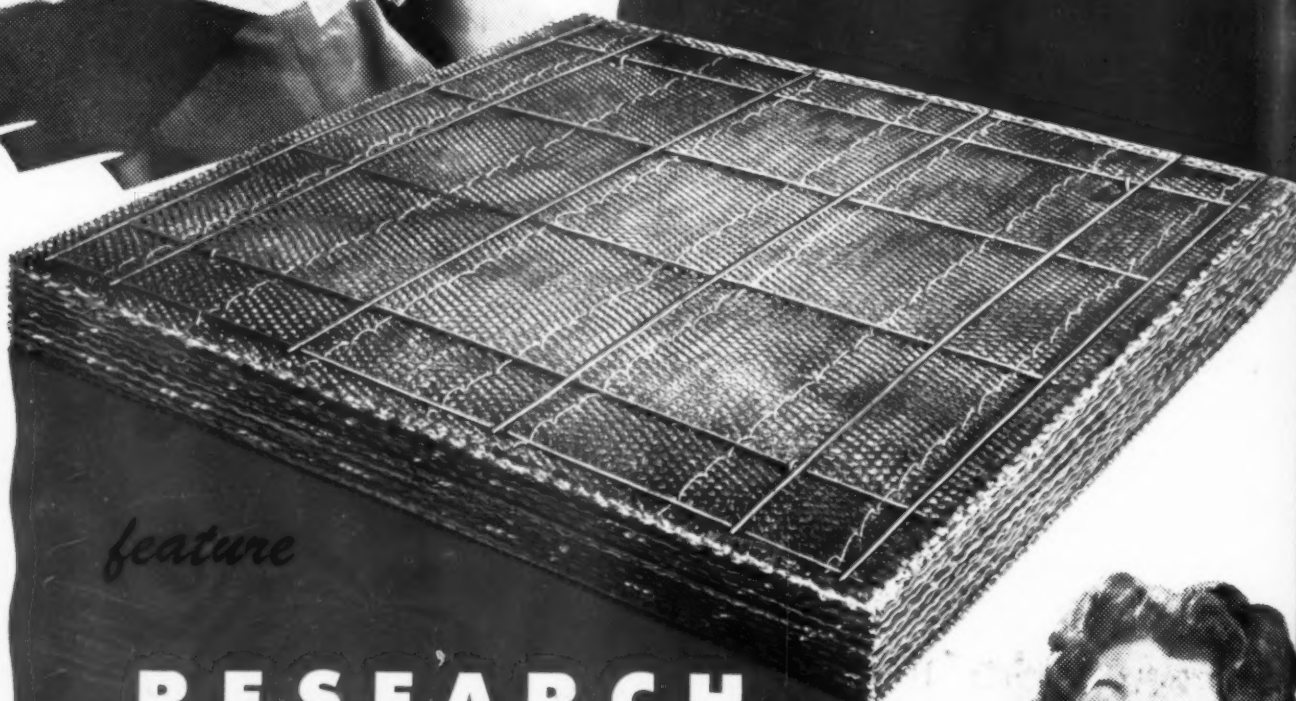
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